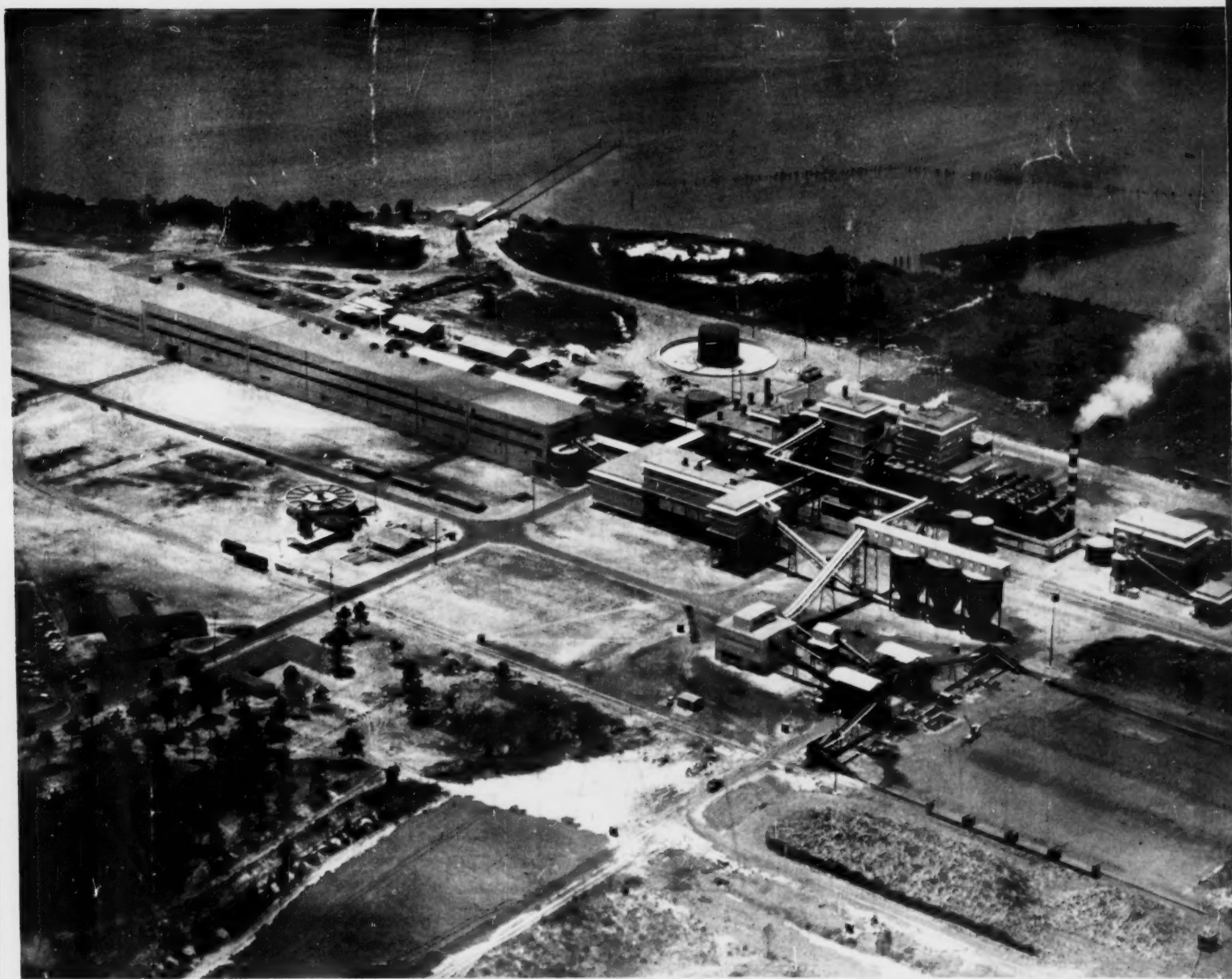


PULP & PAPER

The Cellulose Age

SEPTEMBER, 1953 VOL. 27-NO. 10



FIRST AIR VIEW OF ENTIRELY COMPLETE ST. REGIS MILL AT JACKSONVILLE—SEE STORY IN THIS ISSUE. Flow is in straight line from woodyard at right through machine and finishing room at left. OTHER FEATURES: INDUSTRY LEADERS GO WEST—EVADALE, TEXAS, MILL EQUIPMENT—ALASKA MILL "DEAL"

wet-strength

FOR HIGH WET STRENGTH at low cost, for any type of paper or board, specify Hercules Kymene. It's ready to use, easy to handle, has excellent stability in dilute solutions, and is available quickly wherever you are.

Consult your Hercules P.M.C. representative about this increasingly popular cationic urea-formaldehyde resin and the many new properties it may impart to your papers or boards, or write Hercules for descriptive booklet.

Paper Makers Chemical Department
HERCULES POWDER COMPANY
965 King St., Wilmington 99, Del.

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CHEMICALS FOR PAPER



KYMENE®

PRODUCTION LINE *Low Cost* BARKING

**Hydraulic Jets Strip Hard-To-Bark Logs At
The Rate of 6000 Lineal Feet Per Hour**

THE EXCEPTIONAL SPEED of the improved *Streambarker* actually *paces* subsequent paper mill operations . . . increases production and lowers costs by keeping a steady stream of cleanly barked logs flowing through your mill.

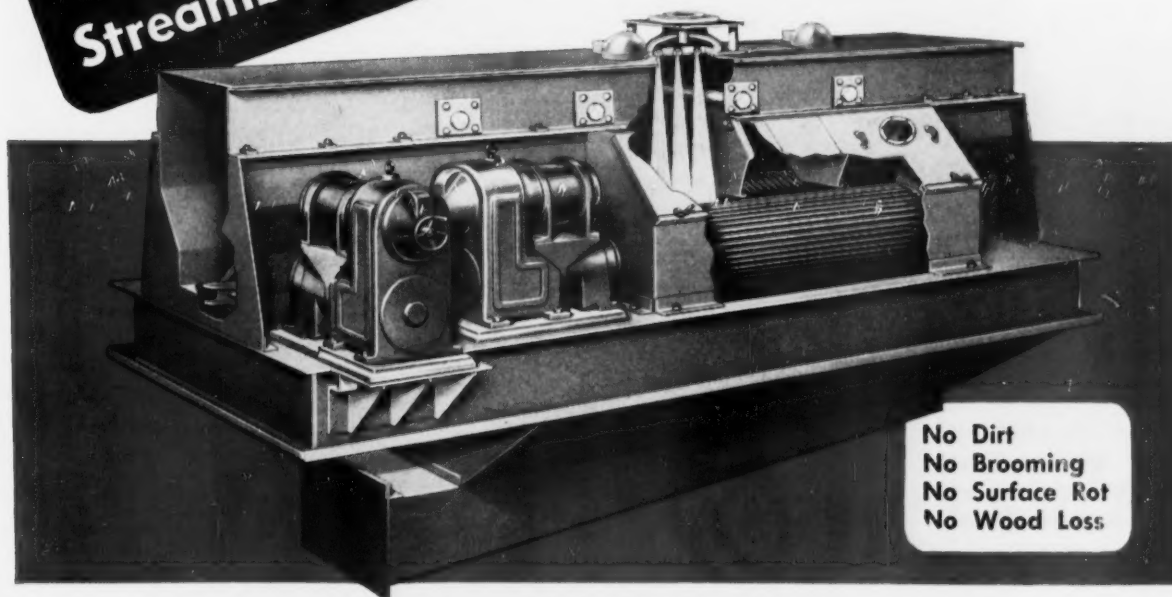
In the *Streambarker*, revolving logs traveling end to end pass under adjustable hydraulic jets. A high velocity water pattern removes bark quickly and completely by erosive action. Any reasonably round log measuring from 48 to 100 inches in length and from 4 to 24 inches in diameter can be processed. Approximately 95% of all logs can be thoroughly cleaned in a single pass.

Production records prove the *Streambarker's* speed. Reasonably round, straight oak, ash, gum, hackberry and cottonwood are being barked at the rate of over 6000 lineal feet per hour — southern pine at a remarkable 9000 lineal feet per hour.

Streambarker is an Allis-Chalmers trademark.

A-4021

*Improved
Streambarker*



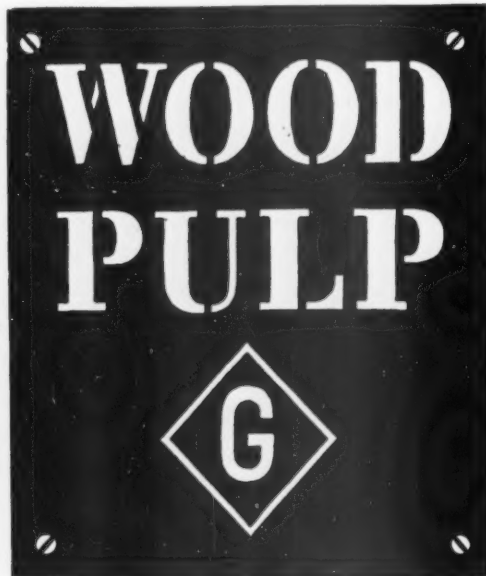
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No Surface Rot
No Wood Loss**

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Established 1886



"... a friend to human race."

ALEXANDER POPE

Without Paper and Pulp to record our discoveries, to preserve our food, to protect our products and to spread our news, the world would be incredibly different.

The vast sum of human knowledge would be incalculably less, and a tremendous number of things that contribute to good living, would cease to exist . . . There are few better friends to mankind than Pulp and Paper.




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PULP & PAPER

"The Cellulose Age"

**Production and
Management Magazine
of the Industry**

September 1953
Vol. 27—No. 10

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 land, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt,
 Turkey, South Africa, China, Hong Kong, Japan, Formosa, near and far
 around the world, wherever pulp and paper are made.

September 1953

The Crisis in the Small Colleges

The present running deficit in qualified engineers for American industry, as has been reported before in this column, is estimated at 60,000. One of the serious problems facing the industry is the need for an ever larger flow of qualified technicians and engineers from colleges and universities.

Along this line, the dean of one of our paper schools said the other day to a PULP & PAPER editor that the most serious aspect of the whole problem was the serious situation now faced by smaller colleges and universities, without state financial support. They also are often overlooked when private endowments are made.

Many of these small schools all over the country have excellent curricula and teachers and have been turning out very desirable young men for industry, but they are in the bite of the line. They are passed by when the large endowments are bequeathed to the big universities. And even these endowments may be fewer and farther between as our tax laws, etc., make it more difficult for any individual to leave such wealth to colleges as, for instance, did the late F. J. Sensenbrenner, of this industry.

Many far-sighted pulp and paper industries have been coming to the rescue of these hard-pressed small privately endowed schools. But one of most intelligent and worthy actions in this respect was that taken recently by Union Carbide & Carbon Corp. It selected no less than 24 different institutions, most of them small colleges, to receive some 400 scholarships costing annually around half a million dollars. The colleges are from New England to the Pacific Coast. It includes liberal arts schools along with technological, and that was an enlightened decision, too. Industry needs men of broad education.

The stipulation is that these scholars must enter industry or business. Union Carbide hopes to attract its share. But the pulp and paper industry, very likely, along with others, will benefit from Union Carbide's generosity.

Free Enterprise—It Gets Lip Service

But are we really for free enterprise?

"It can be seen that government continues to be the principal beneficiary of our efforts, a position completely at variance with the theory of free enterprise."

Thus spake Cola G. Parker, president of Kimberly-Clark, in reporting to stockholders that taxes of over \$13 million from his company meant the government was taking \$6.40 per share of common stock for the fiscal year ended Apr. 30, whereas company earnings were \$4.08 per share and dividends, \$2.40. And provision for taxes on earnings were \$10,661,294 in 1953 as against \$13,538,208, reflecting a decline in earnings.

Sales for the fiscal year were a record \$163,620,794 but net earnings declined from \$11,305,913 to \$8,746,393 after income tax and excess profits tax provisions.

Article Called "A Service to the Industry"

We are pleased to publish this letter recently addressed to the editor of PULP & PAPER.

"I just received from Dr. Paul Sangren, president of Western Michigan College of Education of Kalamazoo, a copy of your magazine for June, 1953.

"As President of the State Board of Education that has jurisdiction of Western Michigan College, I want to express my appreciation to you for the nice publicity that you have given Dr. Sangren and the College.

"Your article on page 38 is a tribute to the College for its leadership in this field. We hope that this will continue to build up to be an even greater service to the paper industry which has helped provide the incentive for this progressive movement.

"Again, let me express my appreciation to your magazine for your interest in this matter.

Very cordially yours, (signed) Stephen S.
 Nisbet, Director of Public Relations,
 Gerber Products Co., Fremont, Mich."

Reprints PULP & PAPER in Good Cause

Hartford Steam Boiler Inspection and Insurance Co.'s magazine "The Locomotive" reprinted the article in a recent issue of PULP & PAPER giving the explanation of the "man-failure"-caused blow tank explosion at Longview Fibre Co. last January. The magazine said it desired to reprint it, because of the statement by R. S. Wertheimer, vice president and manager of Longview Fibre, that he wanted the information known "for the benefit and knowledge of the chemical woodpulp industry."

SIMONDS grinds a CURVE



... to Set a Paper Knife Free

In a SIMONDS Paper Cutter Knife the face side not only tapers back from the cutting edge *but is also concave ground*. This combination gives maximum clearance in the knife. As a result, the knife cuts free and easy without rubbing the stock . . . gives you cleaner, straighter cuts with less strain on the knife and cutter. Simonds famous "Mirror-Finish" on the face side is another plus you get in a SIMONDS Paper Knife . . . a plus that contributes to a keener cutting edge throughout its longer life.

Back of all this is Simonds-made S-301 Steel developed especially for all types of paper cutting applications . . . a special alloy steel that combines maximum hardness with toughness to give you more cuts per grind.

These are good reasons why it will pay you to specify SIMONDS to your dealer for all your knife requirements.

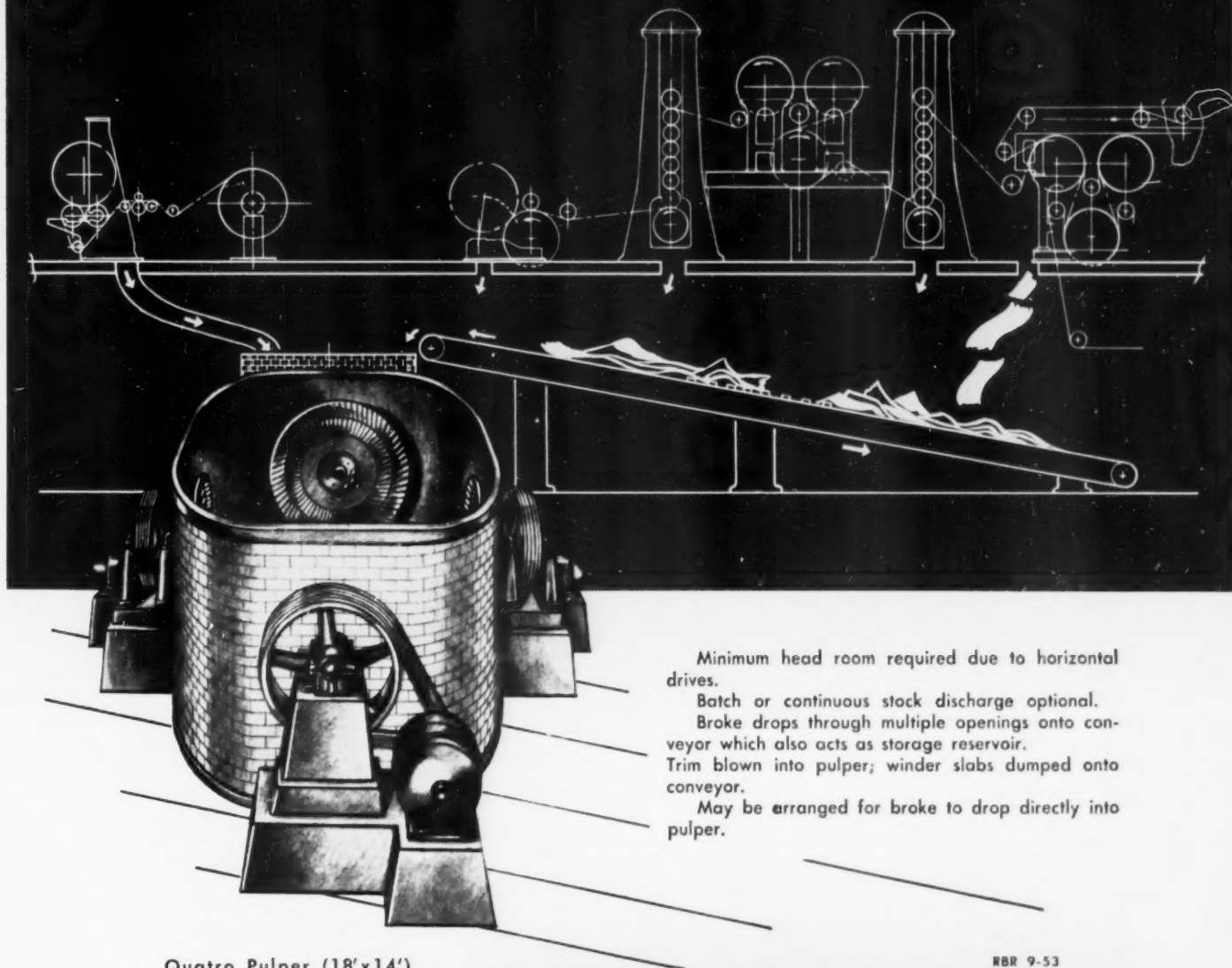
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Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada

One Quatro Pulper, conveyor fed,
handles ALL your paper machine
dry broke, at full machine width!



Minimum head room required due to horizontal drives.

Batch or continuous stock discharge optional.

Broke drops through multiple openings onto conveyor which also acts as storage reservoir.

Trim blown into pulper; winder slabs dumped onto conveyor.

May be arranged for broke to drop directly into pulper.

Quatro Pulper (18'x14')
shown above processes water-
repellent broke from a 216"
machine operating at a rate
of 400 tons per day.

RBR 9-53



HIGHLY RECOMMENDED

for low cost service

CRANE IRON BODY—WEDGE DISC Clamp Gate Valves

Low in first cost, as well as in upkeep... and look at their wide utility—

Use Crane Clamp Gate Valves for steam; hot and cold water; crude, fuel, and lubricating oil; air, gas, and gasoline service.

Also in food and chemical process industries for caustic solutions, alkalies, corrosive chemicals, and gases.

You'll find Crane Clamp Gate Valves extra rugged, with a strong reinforced body and husky stem. Their compact design means a better fit for more places... a saving on piping in many cases. And because of the simplified clamp construction, these valves enjoy wide favor where frequent cleanout is essential. The bonnet assembly and wedge disc lift out easily—the body stays in the line. Reassembling is no problem—the bonnet joint makes up tight and stays tight.

Wide choice of regular patterns, all-iron or brass trimmed. On inside screw all-iron valves, an improved self-draining bonnet prevents entrapment of line fluids in the bonnet—protects the threads, keeps the stem working smoothly. Send for Folder AD 1667 or ask your Crane Representative for full details.

THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Illinois
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Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed, screwed or flanged end. Sizes up to 4 in. Working pressures up to 150 p.s.i. saturated steam, 225 p.s.i. cold service.



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Did you ever see an ad—

WALKING?

Every time an attractive parcel leaves a store—it goes as *an ad that can bring in more trade.*

The store owner depends on the package's unusual color and design to set his store apart from competition as a place of distinctive personality. Remind him that such a package brings to mind not just the idea of shopping . . . but of shopping at **HIS STORE—specifically!** That way, you'll be giving him the kind of help that brings in *new orders* for you.

And by introducing colors that look "tailor-made" for your customers, you'll gain a hold on your market that will result in more *re-orders*, too! Du Pont's technical-service experts will help you give stores

**More color makes more business . . .
for your customers and you**

truly distinctive packaging colors that they'll want to keep using year after year—packaging they'll buy from *you* consistently!

For details—and for information about the hundreds of shades of colors that you can use for wrapping paper, bags, boxes and gummed tape—write E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

FOR MAXIMUM ECONOMY

Du Pont basic dyes

FOR MAXIMUM SOLUBILITY

Du Pont acid dyes

FOR MAXIMUM LIGHT FASTNESS

Du Pont dispersed organic pigments‡

Monastral® Fast Blues Monastral® Fast Greens Lithosol® Pigments

‡REG. U. S. PAT. OFF.

Du Pont Dyes



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

September 1953

Asten DRYER FELTS



Right down your alley

Because ASTENS are woven and conditioned to match your individual mill and grade, they can always be counted on for faster, smoother delivery.

Economy in the long run

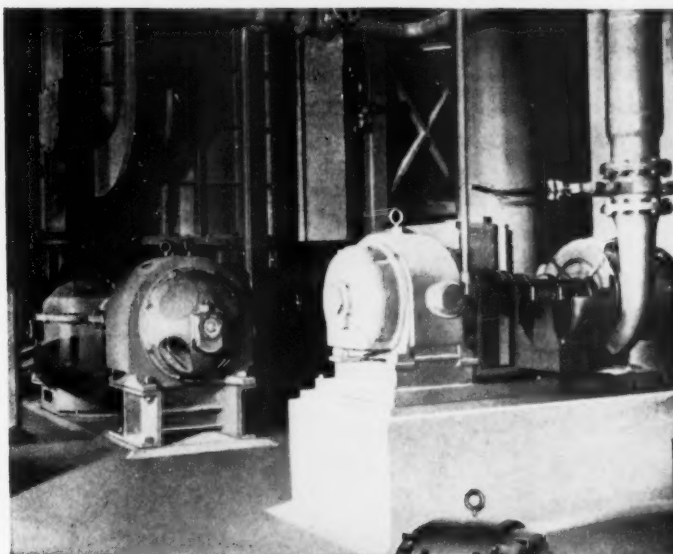
ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.



ASTEN-HILL LIMITED
VALLEYFIELD, QUEBEC

THE KEY TO SUCCESSFUL STOCK HANDLING

Downingtown-Economy Centrifugal Pumps

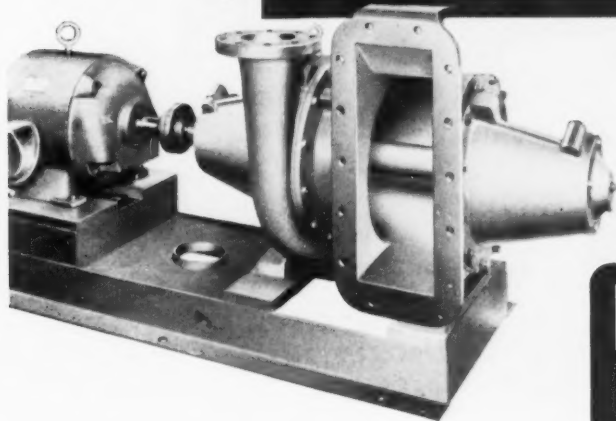
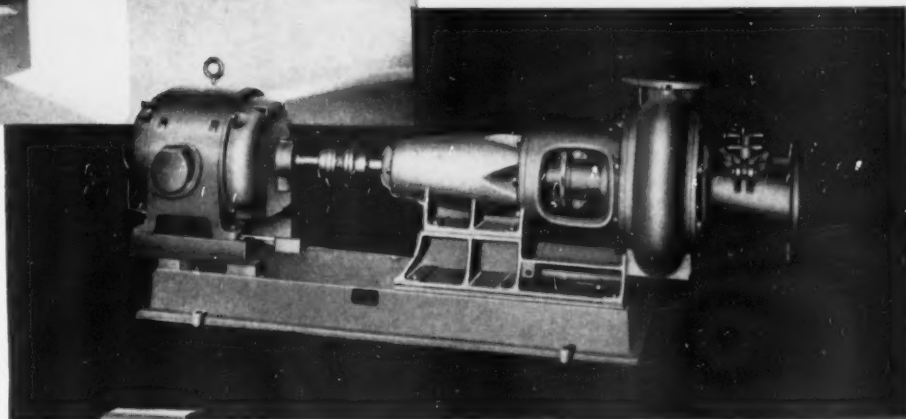


Designed and built expressly for the paper and board industries, Downingtown-Economy Pumps provide the most efficient and economical answers to the problems encountered in stock handling. Standard materials used are those best suited to normal mill operating conditions. Custom engineered pumps are furnished with special metals and for unusual service. All pumps are available in a wide selection of capacities.

Write for the new Downingtown-Economy Pump Bulletin, which gives complete selection tables.

DOWNINGTOWN-ECONOMY Double Suction White Water Pumps

This group of pumps is designed to handle white water and general water supply.



DOWNINGTOWN-ECONOMY Single Suction HC* Stock Pumps

For high consistency stocks, these pumps are equipped with specially designed impellers. HC Stock Pumps are available in both vertical and horizontal models.*

*High consistency

**DOWNINGTOWN
MANUFACTURING CO.
DOWNINGTOWN, PA.**



*West Coast Representative:
John V. Rosland
Pacific Bldg.
Portland 1, Oregon.*

DOWNINGTOWN

**DESIGNERS AND BUILDERS OF PAPER,
BOARD AND FELT MACHINES SINCE 1880**

MODERNIZATION

IS PROFITABLE

SELF-DOCTORING TOPRESS ROLLS

rubber covered
by
GRIFFITH
OF PORTLAND

THE MOST ADVANCED DEVELOPMENT IN RESILIENT ROLL COVERINGS
SINCE THE INTRODUCTION OF RUBBER COVERED SUCTION ROLLS

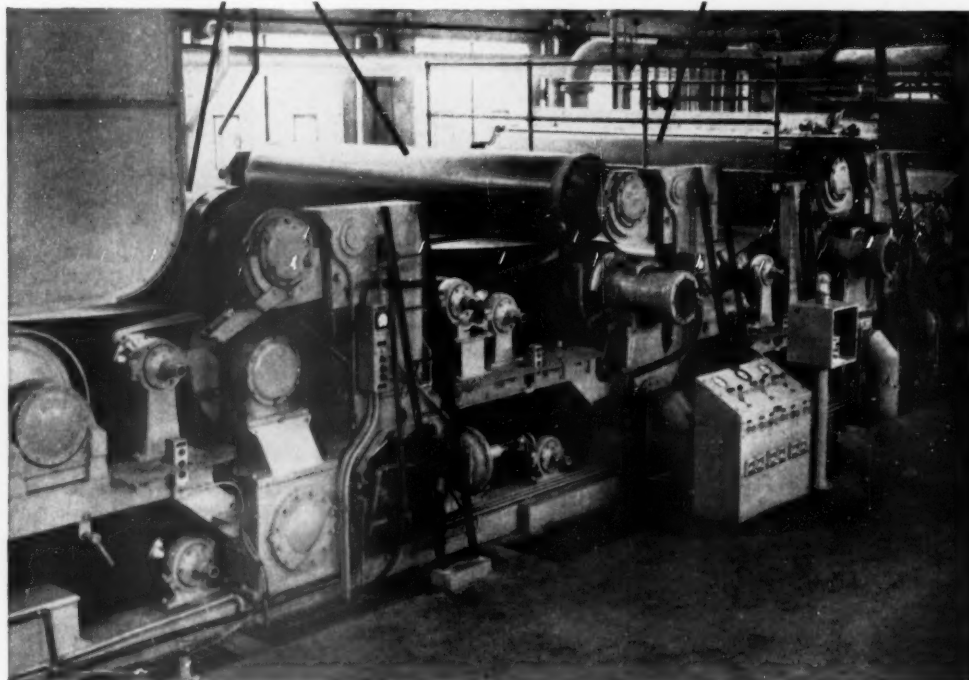
The Self-Doctoring Topress rolls covered by GRIFFITH will not pick the sheet because a special improved rubber cover compound is used. Breaks in the sheet contacting the Topress Rolls are eliminated. Doctor Blades may be entirely removed from the machine—or their use discontinued.

With the installation of GRIFFITH Self-Doctoring Topress Rolls on an open top press, you gain the advantage of resilient rolls of the hardness required for best operation. This gives better water removal at higher speeds, plus much longer felt life.

Three GRIFFITH covered S.D.T. Rolls are used on Weyerhaeuser Timber Company's 400-ton-per-day machine at Springfield, Oregon, running at 1,200 ft. per minute.

SECOND & THIRD PRESSES—GRIFFITH covered Self-Doctoring Topress Rolls with Doctor Blades and Holders permanently removed from machine.

FIRST PRESS—GRIFFITH covered Self-Doctoring Topress Roll with Doctor Blade off the roll.



WRITE, WIRE OR TELEPHONE FOR AN ESTIMATE ON YOUR JOB

Griffith
RUBBER MILLS

2439 N. W. 22nd AVENUE
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WESTERN INDUSTRIAL RUBBER SPECIALISTS SINCE 1911



80 years . . . until harvest time

Douglas fir forests, which supply raw material for most of Weyerhaeuser's mill sites, require 80 years to grow a seedling into a tree of mature size. Contrary to popular belief, only a small part of the total program of reforestation is accomplished by artificial planting and seeding. The primary reforestation job is the restocking of cut over land as old growth timber is harvested. This is being done by natural reforestation with seed supplied from blocks of trees reserved during logging and left standing to reseed the adjacent cut-over area. Where natural seed sources have failed, artificial reforestation by sowing tree seeds with helicopters or mechanical seeders is used.

As more and more virgin timber stands are logged in the forests under Weyerhaeuser management, the harvested land begins growing new trees. As the supply of mature timber diminishes, it will be replaced by a steadily increasing volume of new growth.

There are good possibilities of increasing the yield from this land through silvaculture research and intensified forestry and harvesting practices. Thus Weyerhaeuser's twin goals are a *sustained* and *increased* yield of cellulose products from its 2,500,000 acres of timber land.



CLEAN PAPER GETS THE PRICE

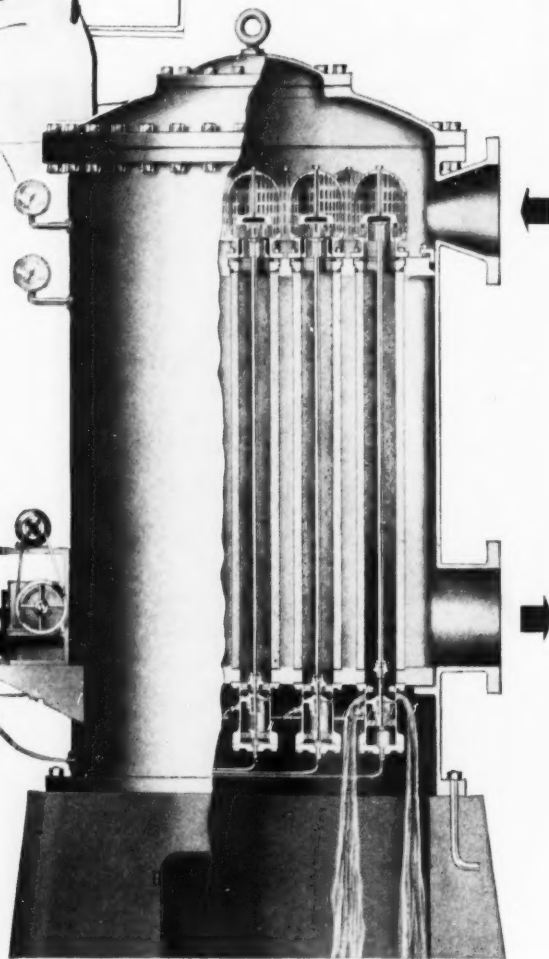


ADAMS WATER FILTRATION GETS THE DIRT

In kraft or tissue, book or newsprint—water quality is as critical as chip quality. No matter what grade of pulp or paper you make, sand, grit and pipe scale are expensive when they keep your product out of the top price brackets.

Water filtration with the fully automatic Adams Poro-Screen or Poro-Stone Filter takes out price-lowering impurities *before* they become part of the stock. Continuous backwashing effectively prevents clogging of filter elements—avoids costly, cumbersome cleaning operations.

Remember—in its early stages your product is



about 98% water, and most water-borne impurities stay with the stock.

Find out what Adams filtration has done in situations like yours. Write for the new 20 page booklet on water filtration in the Pulp and Paper Industry, Bulletin No. 691.

R. P. ADAMS COMPANY, INC.

210 EAST PARK DRIVE, BUFFALO 17, N. Y.

**Duct connection on
side leaves ends
free for access!**

one of
many
plus
features
in these...



ELLIOTT forced-ventilated squirrel-cage **MOTORS**

No need to disconnect and remove the ventilation duct to get at the bearings and remove brackets of this motor.

This squirrel-cage induction motor is rated 300 hp, 500 rpm, 3 phase, 50 cycle, 2300 volts and 50°C rise. It is one of a group for a specialized application, and typifies the facility with which the welded steel enclosure design of large Elliott motors lends itself to easy modification for specific conditions. Duct opening on the side

takes incoming air, and on the opposite side a similar opening covered with a plate can be used for emergency ventilation should the forced ventilating system be inoperative. Installed at high altitude, corona effect at rated voltage is neutralized by special insulation.

For details on these and other Elliott motors, contact your local Elliott representative or write Elliott Company, Ridgway Division, Ridgway, Pa.

ELLIOTT Company

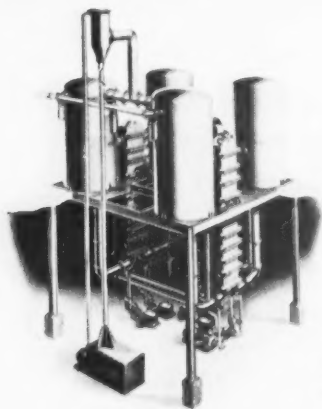
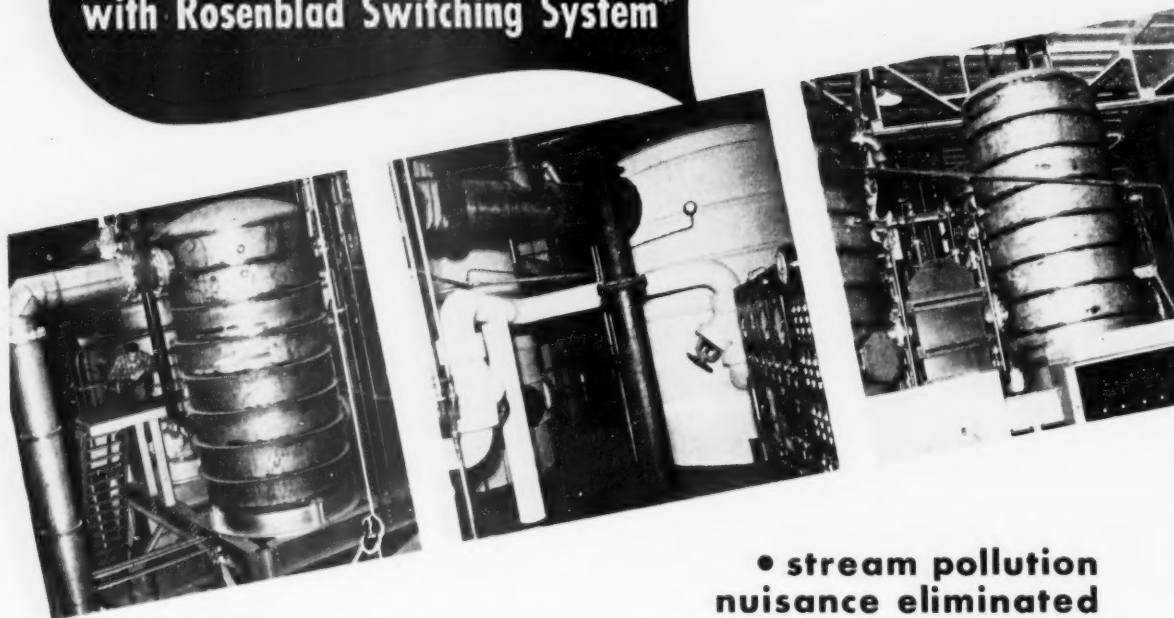
RIDGWAY DIVISION



**Operating installations in the
U. S. A. prove value of General
American Conkey Evaporators
with Rosenblad Switching System***

**Full details
available**

Find out how a Conkey
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Switching System can
avoid "down time" and
eliminate scale
removal costs for you.



Conkey 4-Body Triple
effect Flat Rate Heating
Surface Evaporator

- stream pollution
nuisance eliminated
- continuous
capacity operation
- reduced fuel costs
with liquor burning
- by-product return
from concentrated liquor



*PATENTS APPLIED FOR

**PROCESS EQUIPMENT DIVISION
GENERAL AMERICAN TRANSPORTATION CORPORATION**

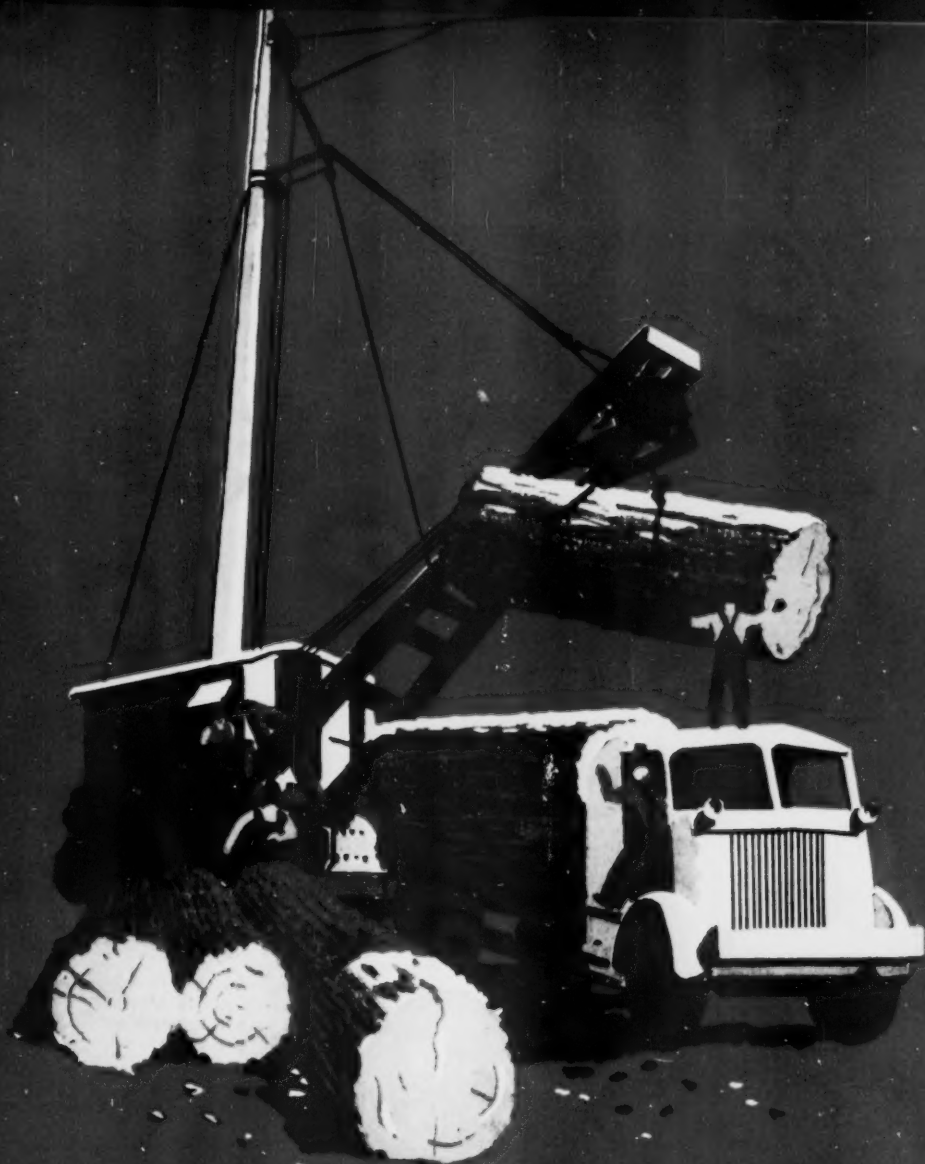
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Other General American Equipment: Turbo-Mixers • Filters • Dewaterers
Towers • Tanks • Louisville Dryers • Pressure Vessels

Sole licensee in the U. S. A. for the A. B. Rosenblads Patented Evaporator Switching System



FOREST RESERVES

Puget Sound owns or controls extensive timberlands in the Pacific Northwest, and its operations extend from the felling of the trees to the final delivery of finished pulp. Every log is completely utilized; modern hydraulic barkers and chippers result in reducing waste in wood utilization by 20%, and wastes are fully utilized in the alcohol and by-products plants.

PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON

Photomicrograph of raw pulp.



SUTHERLAND

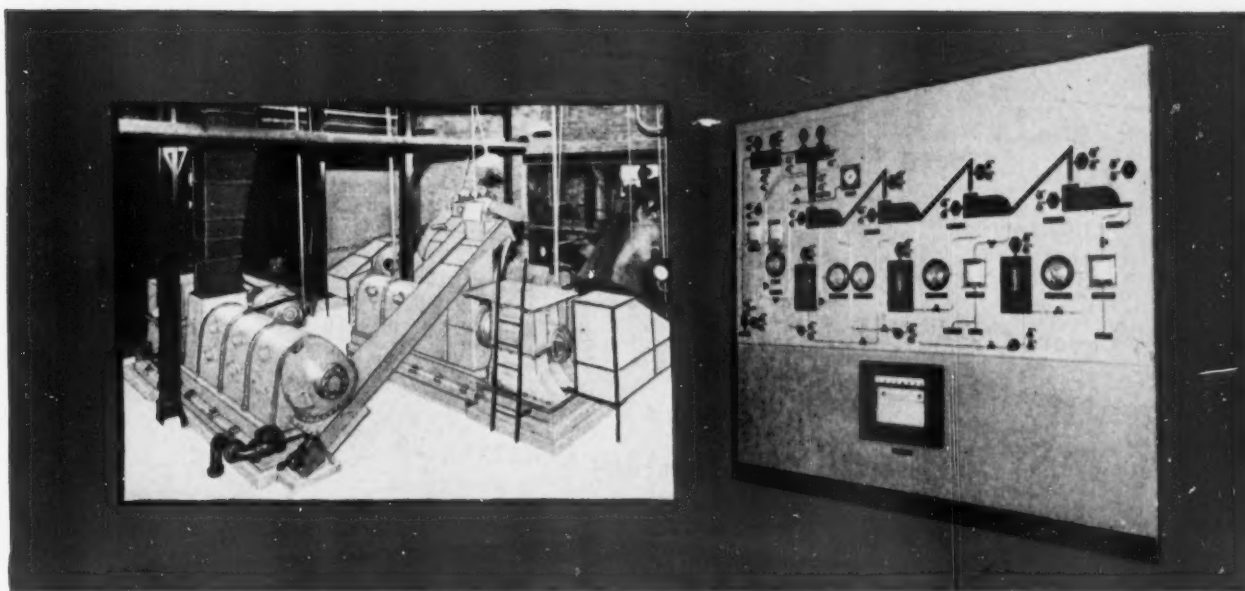
PRESSURE WASHING SYSTEM

saves



Photomicrograph of pressure washed kraft pulp. Note curling of fibers.





. . chemicals, heat, water, power, space

Today's most modern and most effective method for washing pulp, the outstanding features of the Sutherland Pressure Washing System make conventional systems obsolete. A product of Sutherland engineering and design, the Sutherland Pressure Washing System gives you stronger, cleaner pulp...at savings the profit-minded mill owner cannot afford to overlook.

EFFICIENT OPERATION

Taken from a conventional blow tank and thickened to 12% in an underpass thickener, the pulp is fed into a series of specially designed presses (above left). Here the pulp is washed on a counter-current principle, alternately squeezed to about 36-38% dry then diluted 12-14% with liquor from the succeeding press. Strong liquor draining from the thickener is sent to the evaporators of the recovery system. Completely automatic in operation, the entire system can be operated by one man from a single control panel (above right).

REDUCED OPERATING COSTS

Only the Sutherland Pressure Washing System offers these cost-saving advantages:

CHEMICALS: positive squeezing action insures uniform separation of liquor from pulp, higher chemical recovery.

HEAT: use of pressure instead of vacuum results in better blow-heat recovery...eliminates flashing of steam.

WATER: less than 200 g.p.m. required for a 300-ton system.

POWER: consumption ranges from 1.36 horsepower per air-dry ton for a three-stage system to 1.71 for four stages. Most of this power is consumed in doing work on the pulp (note curling of fibers in photomicrograph), not in pumping liquor through the system. There is a definite increase in strength with pressure washed pulp.

SPACE: compact presses can be arranged in a variety of space-saving ways to suit individual mill requirements. High consistencies and foam-free operation eliminates need for over-size transfer and settling tanks.

Sutherland Pressure Washing Systems can be furnished in four and five stages to fit the needs of the individual mill...at a capital investment appreciably below that of conventional systems. Write for a copy of "Pressure Washing", without obligation...or consult your Sutherland representative about the Sutherland Pressure Washing System that will cut operating costs at your mill.

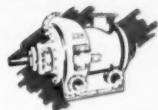


SUTHERLAND, INC.

TRENTON 8, NEW JERSEY

Sold & Serviced by
**SUTHERLAND
REFINER CORPORATION**

Manufactured by
VALLEY IRON WORKS CO.
Appleton, Wisconsin

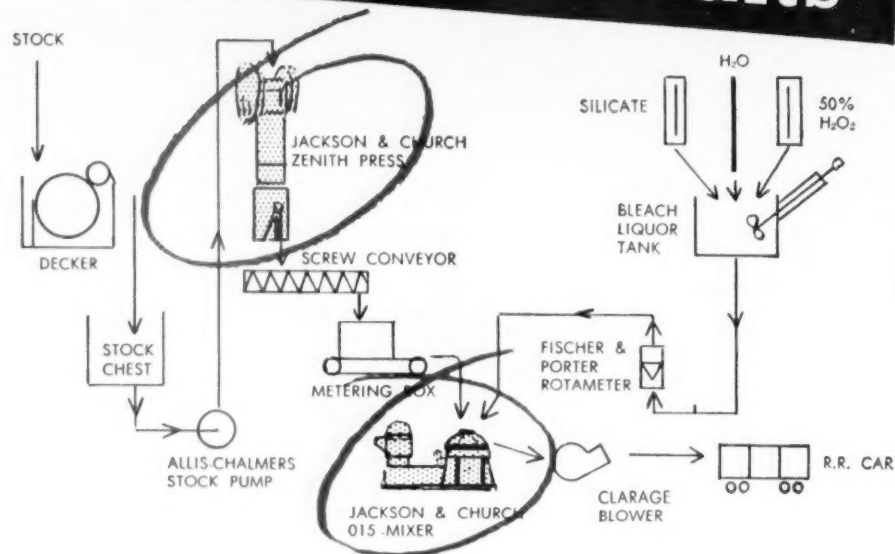


BREAKER TRAPS • PRESSURE WASHING • HIGH YIELD SYSTEMS

**Groundwood
Pulp**

FIRM: Hoberg Paper Mills, Little Rapids Division
LOCATION: West DePere, Wisconsin
 Plant, recently purchased by Hoberg, engages in
 groundwood pulp bleaching. Efficiency of bleaching
 operations increased through High Density Bleaching
 System using J-C Pulp Press and J-C Bleach Mixer.
 Results successful. Plant now handling 30 tons/day.

formula for results



The experiences of an ever increasing number of pulp mills proves conclusively that the efficiency of bleaching groundwood pulp can be greatly increased.

The Jackson & Church High Density Bleaching System makes possible *the same brightness at lower cost or greater brightness at same cost!*

The market for bleached groundwood pulp is waiting. Let our engineers help you *sell* that market.

J-C Engineers are available for consultation and assistance in developmental work. For application to individual problems, write Dept. PTJ.

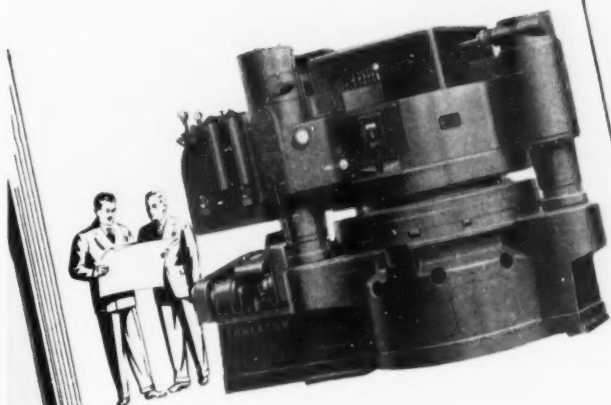
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JACKSON & CHURCH CO. SAGINAW, MICHIGAN

Work well done since eighty-one

IS YOUR MILL LISTED HERE?

BLUE BOOK of PAPER MILLS



NORTH AMERICAN EDITION
CURLATOR INSTALLATIONS

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Anglo-Canadian Pulp & Paper Mills, Ltd.
Gaspesia Sulphite Company Ltd.
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Price Bros. & Co., Ltd.
Quebec North Shore Paper Co.

UNITED STATES

Champion Paper & Fibre Co.
Marathon Corporation
The Northwest Paper Company
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(continued)

HERE'S WHY...

These MILLS Installed Curlators

- to Increase Pulp Yield 10% or More.
- to Effect Savings in Steam, Sulphur and Limestone without Change in Product Quality.
- to Eliminate All Fibre Bundles and Reduce Dirt without Loss of Freeness or Cutting of Fibres.
- to Improve Pulp Quality.
- to Cut Costs.

If your mill hasn't investigated the Curlator... seen how Curlation saves pulp wood and improves paper quality... been shown how Curlators pay for themselves in less than a year, WRITE us at once and let us show you without obligation.

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WESTVACO WYOMING'S ON STREAM!

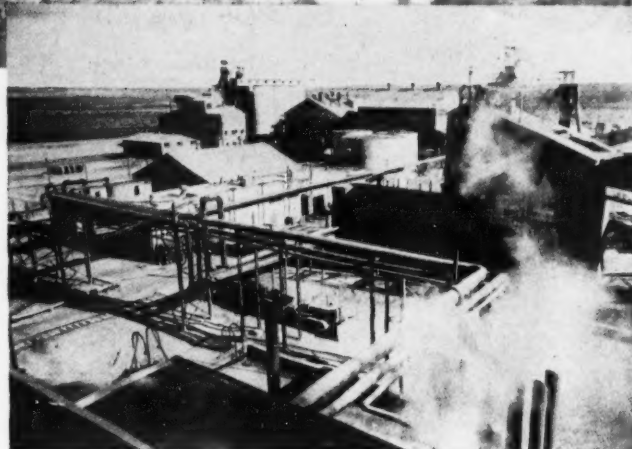


The First New Soda Ash Producer in 35 Years Now Making 6/L Shipments

Completed in record time, Westvaco Wyoming is fast approaching capacity output of Soda Ash that meets or exceeds every commercial standard of purity. Physically, Westvaco Wyoming Light Soda Ash is distinguished by its needle-like crystalline structure. Its crystalline nature gives it excellent dispersal properties in water, which results in a rapid dissolution rate. A unique, non-caking material, it has excellent flowability . . . is easier to handle in processing operations.

First major alkali production in the Intermountain area, this new plant has an installed capacity of 300,000 tons per year. Standing squarely atop 250 million tons of unbelievably pure trona, it has proved-up reserves sufficient to supply the entire needs of all industry for the next 35 years. Industries now using 30% of all U. S. Soda Ash can be served economically from this location.

Soda Ash users from the Mississippi Valley to the Pacific will immediately benefit by this new nearby source of higher quality Light and Dense Ash. Ultimately, all users everywhere will benefit by the stabilizing influence of this development of a great natural resource. We will be pleased to furnish specifications, samples and prices to prospective users.



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CHEMICAL AND MECHANICAL WOOD PULP



Paul Bunyan strapped slabs of bacon on his feet to grease the cookhouse griddle. This was the only way he could keep up with his flapjack-pouring invention—a Bessemer steel converter.

A reproduction of this incident from the fabulous life of Paul Bunyan—the seventy-second of a series—will be sent on request. It will contain no advertising.

*You could hardly find
a pulp or paper mill...*

*...for which instrumentation was not
engineered at*

FOXBORO

Process control instrumentation for nearly every leading pulp and paper mill in the United States and Canada has been engineered at Foxboro. The reason is simple. Foxboro engineering is based on acknowledged leadership — in knowledge of the industry's requirements, in research, in application experience, in product design and diversity.

In the labs and on the drawing boards at Foxboro, today, are tomorrow's developments for pulp and paper processes ... developments that will carry on the Foxboro tradition of originating the instrument systems that boost production and increase quality and uniformity throughout the industry.

The Foxboro Company,
999 Neponset Avenue
Foxboro, Mass., U.S.A.

Leading mills know that extensive use of advanced instrumentation leads to operating efficiencies never before possible. Significantly, of the industry's newest mills, an overwhelming majority selected Foxboro to engineer and supply mill-wide instrumentation. Typical examples include:

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Macon Kraft Company, Macon, Ga.
Weyerhaeuser, Pulp Div., Longview, Wash.
Weyerhaeuser, Pulp Div., Springfield, Ore.
Marathon Paper Mills of Canada, Ltd., Marathon, Ont.
Long Lac Pulp & Paper Co., Ltd., Terrace Bay, Ont.
Columbia Cellulose Co., Ltd., Watson Island, B. C.
Sora Pulp Co., Ltd., Port Mellon, B. C.
St. Lawrence Corp., Ltd., Red Rock, Ont.
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In the plans for nearly every modern mill, many hours of creative engineering work like this ... AT FOXBORO ... have played a vital part.



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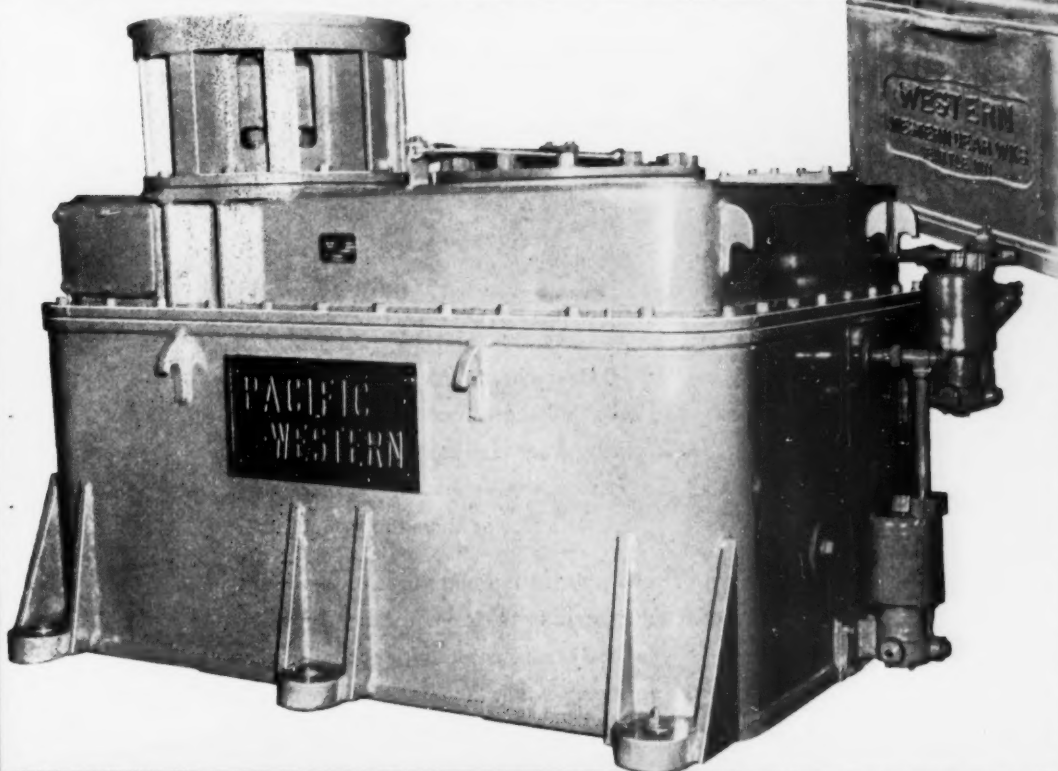
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Pulp and Paper Mill INSTRUMENTATION

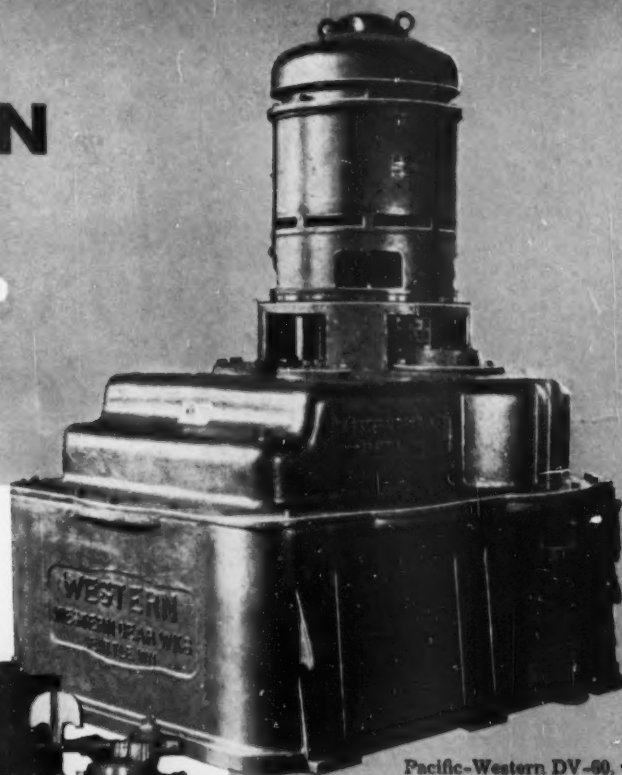
FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

PACIFIC-WESTERN Agitator Drives...

built for years of economical,
heavy-duty service!



Pacific-Western TV-64, vertical triple reduction drive unit



Pacific-Western DV-60, vertical
double reduction drive unit

*Here are 11 Reasons why
Pacific-Western Agitator Drives
are best for YOUR needs!*

CHECK THESE OUTSTANDING FEATURES...

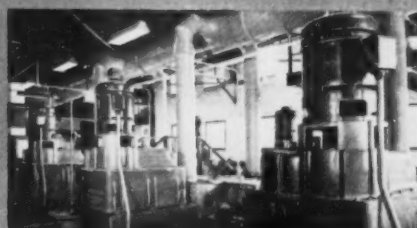
- * Vertical electric drive saves floor space...
- * Heat-treated helical gears are designed for years of continuous trouble-free operation...
- * Adapters for motors with vertical NEMA frame and solid shaft ring base eliminate separate motor base...
- * Full range of ratios, from 12 to 1 through 300 to 1 with DV or TV units...
- * Heat-treated alloy steel shafts provide long life and dependability...
- * Low speed shafts equipped with heavy duty tapered roller bearings eliminate need for separate thrust bearings...
- * Lubricating systems especially designed to meet every application...
- * Scavenging pump systems eliminate all possibility of oil leakage around low speed shaft...
- * Modern vertical drives are considerably less expensive than old style right-angle drives...
- * Simple, compact design and construction reduces installation and maintenance cost...
- * These outstanding features have given Pacific-Western Agitator Drives universal acceptance throughout the Pulp Industry.



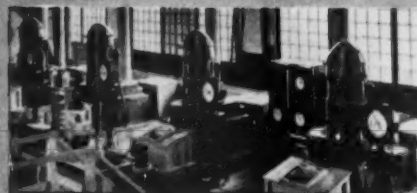
Eleven double reduction Pacific-Western vertical agitator drives with 75 HP motors occupy minimum floor area in installation with capacity of 450 tons of bleached pulp per day. Above right shows triple reduction units, part of same installation, mounted high on chlorination tower, and in foreground on low density caustic tower.



Write for Booklet No. 5308
Address your request
to nearest Pacific-Western office



Double reduction agitator drives for caustic bleachers... 75 HP motors; 70.85:1 ratio; 1750 RPM.



Pacific-Western Type DV-60 agitator drives shown in pulp bleaching tank service in a Pacific-Northwest mill.

Write, wire or phone your nearest Pacific-Western office

Plants—417 Ninth Ave. S., Seattle 4, Washington
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Manufacturers of PACIFIC-WESTERN Gear Products

Pacific Gear & Tool Works

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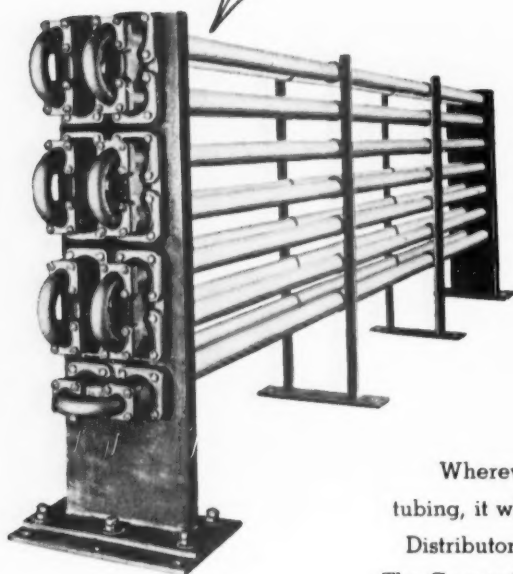
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(Los Angeles County)

Houston



Carpenter Stainless Tubing KEEPS PROCESSES GOING ON SCHEDULE



Modern heat exchanging equipment like this heater/cooler used in a large Wisconsin paper mill has to stay on the job.

You can't afford to interrupt a process for hours or days to replace tubes.

That's why the manufacturer of these units selected Carpenter Stainless Tubing, Type 316.

In addition to providing good resistance to the corrosive effects of sulphite waste liquor, Carpenter tube quality and uniformity help to make the 20th unit as good as the first.

Wherever a product or process involves corrosion-resistant tubing, it will pay to put Carpenter experience to work for you.

Distributors are located in principal cities from coast to coast. The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N. Y. "CARSTEELCO"

Send for **USEFUL SLIDE CHART**

Physical properties, sizes and gauges, cross-sectional areas, velocity constants, pressures, weights and other technical data on Carpenter Stainless Tubing for heat exchanger applications are condensed into a handy chart. It's yours for the asking, on your company letterhead.



Carpenter

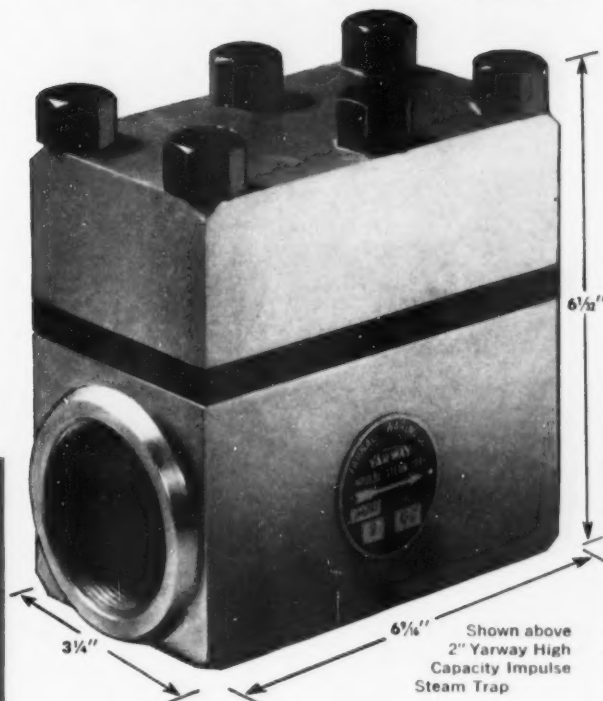
STAINLESS TUBING & PIPE



- guaranteed on every shipment

PULP & PAPER

NEW HIGH CAPACITY IMPULSE STEAM TRAP



CAPACITIES OF
YARWAY SERIES 50 TRAPS

Pressure PSIG	CAPACITY* pounds per hour		
	1 1/2"	2"	2 1/2"
1	3000	4670	9500
2	4500	7000	15000
3	6000	9350	19500
4	7000	10900	22400
5	7500	11700	24400
6	8000	12500	26000
7	8300	12900	27300
8	8600	13400	28400
9	8800	13700	29400
10	9000	14000	30250
15	9650	15050	32800
20	10300	16100	35000
40	12530	19600	43500
60	14400	22500	49600
80	16000	25000	55000
100	17300	27000	60000
125	18700	29200	65700
150	19900	31100	70300
200	21900	34200	77400
250**	23500	36200	81500
300**	24700	37400	84000

*Capacities are based on condensate 30° F. below steam temperature.

**When total equivalent length of piping connected to trap is greater than 20 feet, it is recommended that the capacity values indicated for 200 # pressure be used in figuring requirements for all pressures above 200 psi.

NEED to handle condensate in unusually large quantities?

Then here is your steam trap—the Yarway Series 50 Impulse—"big brother" to the well-known Series 60 and 120 Yarway Impulse Steam Traps of which over 900,000 have been sold. Uses the same basic operating principle.

The new Series 50 (made in three sizes, 1 1/2", 2" and 2 1/2"), has proved highly successful for condensate drainage on heat exchangers and stage heaters in power plants; reboilers, reheaters, stills, evaporators, debutanizers, etc., in refineries and chemical plants; large dryers in paper mills and textile plants, etc.

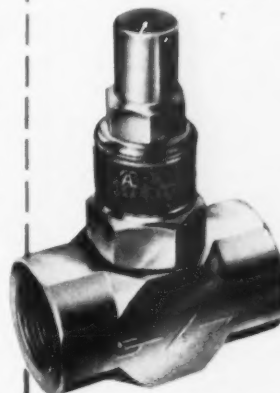
In many cases, Yarway Series 50 Traps have replaced traps several times their size.

For full information, write for Yarway Bulletin T-1745.

YARNALL-WARING COMPANY
103 Mermaid Avenue, Philadelphia 18, Pa.

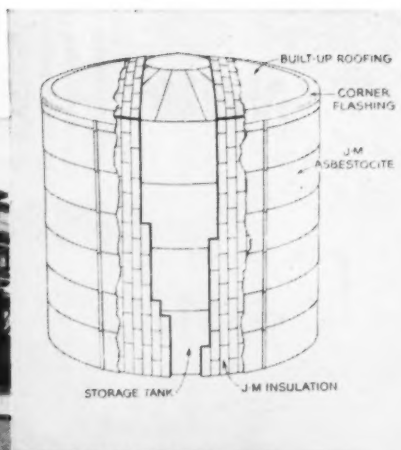
YARWAY
IMPULSE
STEAM TRAP

OVER 900,000
STANDARD
YARWAY
IMPULSE
STEAM TRAPS
ALREADY SOLD



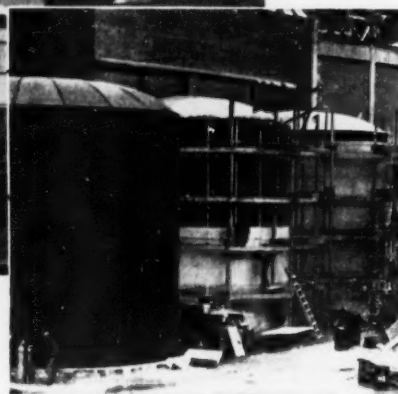
Series 60 and 120 Yarway Impulse Steam Traps in six sizes from 1/2" to 2" are used for all normal requirements. Stocked and sold by 250 local distributors. See Bulletin T-1740.

Cutaway drawing shows how J-M Weather-Protected Insulation is applied to tanks such as those at the S. D. Warren Company paper mill. Standard methods for mechanical securing of the insulation are used. Asbestocite sheets are then applied over the insulation, in accordance with the simplified Johns-Manville specification.



▲ (Above) Completed job of J-M Weather-Protected Insulation on black liquor tanks of the S. D. Warren Company.

(Right) Skilled applicators of an outstanding J-M Insulation Contractor, P. S. Thorsen Co. of South Boston, Mass., applying Asbestocite sheets over Zerolite insulation.



S. D. Warren Company saves fuel, reduces maintenance on outdoor tanks with J-M Weather-Protected Insulation

On black liquor tanks of the S. D. Warren Company paper mill at Cumberland Mills, Maine, Johns-Manville Weather-Protected Insulation pays a "double dividend":

It saves money on fuel and maintenance. J-M Zerolite* insulation keeps the heat in . . . thereby saving a substantial amount in fuel costs. J-M Asbestocite*, a strong asbestos-cement sheet material, covers the Zerolite Insulation to protect it both from the weather and from wetting due to normal plant operations. This "bodyguard" layer of Asbestocite Weather Protection makes the tanks virtually maintenance-free and helps hold down operating costs.

It helps provide close temperature control. The temperature of black liquor in these tanks must be maintained so that it will flow freely and not clog up pumping apparatus. J-M Weather-Protected Insulation helps do the job dependably and economically.

Whatever the operating temperature of outdoor tanks and vessels, Johns-Manville offers the right insulation for application under the Asbestocite weather protection. For example, J-M 85% Magnesia Insulation is also widely used for this service because of its proved performance for temperatures to 600 F.

To be sure that the insulation and its weather protection is properly applied to pay the greatest return on your investment, J-M offers the services of experienced J-M Insulation Engineers and J-M Insulation Contractors. These men stand ready to give you an insulation job that will more than pay off your initial investment through maximum fuel savings.

For further information about J-M Weather-Protected Insulation, write to Johns-Manville, Box 60, New York 16, New York. In Canada, 199 Bay Street, Toronto 1, Ontario.

*Reg. U.S. Pat. Off.

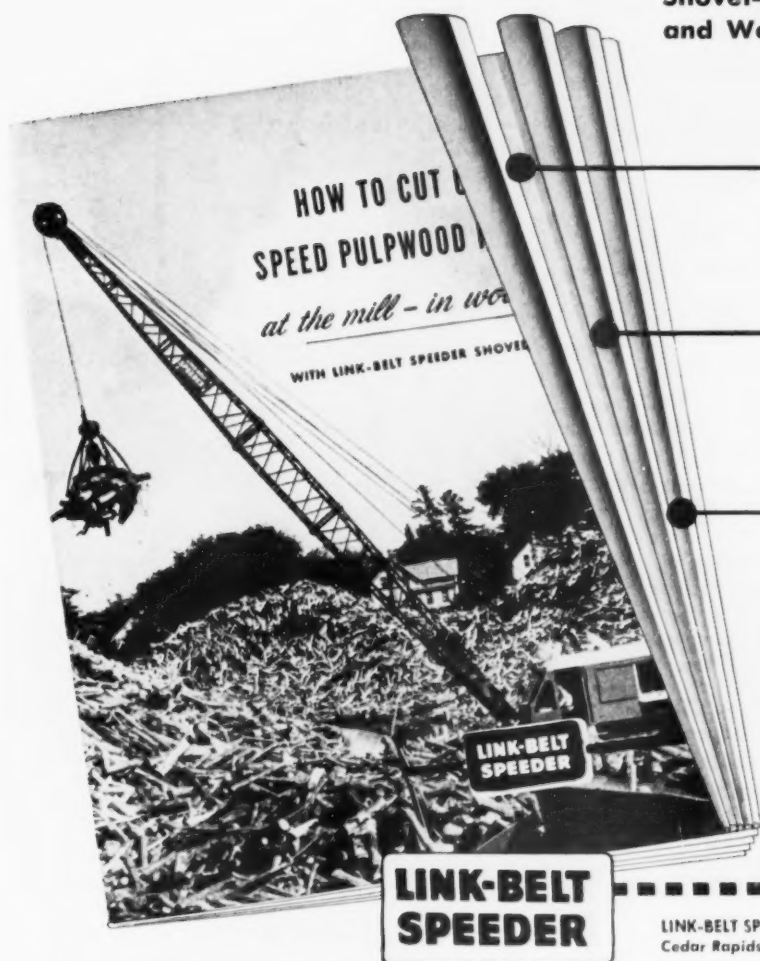


Johns-Manville **FIRST IN INSULATION**

MATERIALS • ENGINEERING • APPLICATION

Announcing a practical booklet on the latest pulpwood handling methods

Here's a comprehensive pictorial analysis of how Link-Belt Speeder Shovel-Cranes cut costs in Millyard and Woodland operations



MILL DIVISIONS: Where they use shovel-cranes, what attachments have been found most efficient, what kind of savings are effected.

WOODLANDS DIVISIONS: When to choose a crawler, or wheel-mounted shovel-crane—facts about the increasing importance of wood concentration yards.

EQUIPMENT BUYERS: Features to check when buying a shovel-crane.

This two-color, 16-page booklet is filled with installation photos, facts and figures. A close check of its contents may help you make substantial reductions in your pulpwood handling costs.

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SPEEDER**

LINK-BELT SPEEDER CORPORATION

Cedar Rapids, Iowa

- Builders of a complete line of crawler, truck and wheel-mounted shovel-cranes.
- Represented everywhere by Factory-trained Distributor Sales and Service Specialists.

LINK-BELT SPEEDER CORPORATION
Cedar Rapids, Iowa

Please send me the booklet "HOW TO CUT COSTS, SPEED PULPWOOD HANDLING," at no cost.

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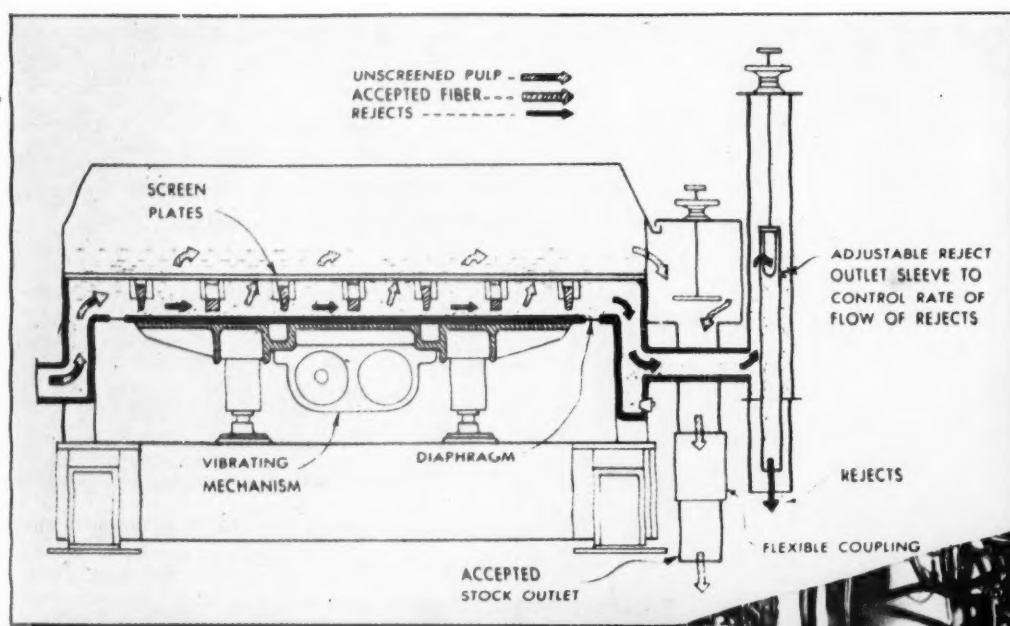
CITY..... ZONE..... STATE.....

19-107

OLIVER-AHLFORS *UPFLOW* Pulp Screen

Shives, Dirt and Other Rejects

Are Licked Before They Get Started



Study this diagrammatic sketch. Note how unwanted solids in the pulp—many being denser and heavier—fall away from the wanted fibers in the pre-screening compartment. They're licked before they ever get started. Most don't even reach the screening surface. Certainly they don't tend to force their way through the slotted openings along with good fibers as they do with down flow screens.

This is the distinctive advantage of the Oliver-Ahlfors Pulp Screen! Other advantages include:

- 1 Entire screen surface constantly operating at full capacity;
- 2 Requires approximately one half of floor space compared to conventional flat screens;
- 3 Continuous automatic screen plate cleaning, minimizes operator attention;
- 4 Screens at high density reducing required decker capacity.

As for its application: The Oliver-Ahlfors Screen is recommended as a primary and secondary screen on all bleached or unbleached chemical pulp. Let us know when it will be convenient and we'll have one of our experienced pulp and paper engineers call to discuss your requirements and to tell you about the screens operating in this country as well as in many mills in Europe.

NEW YORK 36 — 33 West 42nd Street
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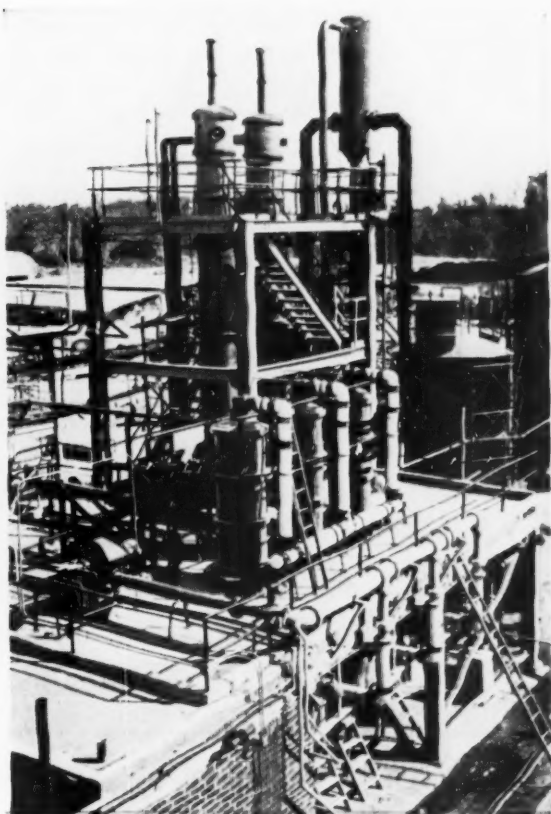
OLIVER UNITED FILTERS inc.

WORLD WIDE SALES, SERVICE AND MANUFACTURING FACILITIES

NEW!

TWO MORE SOLVAY FIRSTS FOR THE PAPER INDUSTRY!

- ① *A new, practical, safe, low-cost method of producing chlorine dioxide*
- ② *A new, improved method of pulp bleaching with chlorine dioxide*



Chlorine dioxide plant of Riegel Carolina Corp., Acme, North Carolina, showing absorber and reactor towers, steam jet refrigeration unit and sodium chlorate and sulfuric acid tanks.

- ★ 90 G.E. brightness or better with less than 1% chlorine dioxide
- ★ Exceptionally low dirt count
- ★ Excellent pulp characteristics with no strength loss
- ★ Low chemical costs
- ★ Reduced pulp shrinkage

Through Solvay's exclusive new methods employing chlorine dioxide, pulp makers can obtain higher quality, bleached, purified pulp with *finer fibres . . . higher brightness . . . better permanency of color . . . no quality degradation*—AT NO INCREASE IN COST!

Now for the first time Solvay makes available to the industry a *tested, proven method* of producing chlorine dioxide *economically and safely* and an improved method of using chlorine dioxide in a bleach sequence.

The efficiency and dependability of the new Solvay methods have been *tested and proved* by the continuous production of thousands of tons of superior pulp. The results have exceeded original expectations—results that have not been obtainable heretofore!

Both of Solvay's methods, for which we have applied for patents, are available to the paper industry on a non-exclusive contract on a royalty-free basis.

If you would like to obtain details, we will be glad to send you basic process plans and detailed information. Solvay's Technical Service will be available during design stages as well as during start-up and training periods.

SOLVAY PROCESS DIVISION

ALLIED CHEMICAL & DYE CORPORATION

61 Broadway, New York 6, N. Y.

Soda Ash • Caustic Soda • Potassium Carbonate • Calcium Chloride
Caustic Potash • Cleaning Compounds • Ammonium Bicarbonate
Chlorine • Sodium Nitrite • Sodium Bicarbonate • Snowflake Crystals
Para-dichlorobenzene • Monochlorobenzene • Ortho-dichlorobenzene
Ammonium Chloride



JAPAN'S ALASKA PLAN

ALASKA PULP DEVELOPMENT CO. ORGANIZED

Copyright (exclusive) by PULP & PAPER, 1953

EXCLUSIVE REPORTS from Japan to PULP & PAPER reveal that Japanese companies are proceeding to invest substantially in an "Alaska Pulp Development Co."

Plans are going forward for this investment company, which would in turn invest in an American-owned and American-staffed and -directed corporation, the "Sitka Lumber & Pulp Co."

A leading pulp broker in Japan writes that the promoters of this Alaska venture, however, apparently are not figuring on transferring much capital from Japan to build the proposed lumber and pulp operations in Sitka.

Instead, they are proceeding on the basis that they might possibly borrow necessary money from the Export-Import Bank of Washington or from private banking houses in the U.S. He writes that, "according to hearsay in Tokyo," the Japanese industry leaders plan to persuade the Japanese Government to guarantee loans they might obtain from U.S. banking sources.

Forest Service regulations and procedure for bidding for the Tongass National Forest designated pulptimber allotments in Alaska would be complied with. Acts of Congress dating back to 1897 would be strictly obeyed.

Meanwhile, in this country, PULP & PAPER has received written assurances, addressed to this magazine, from both the U. S. Department of Commerce and the Export-Import Bank of Washington that they will consider American interests' objections to the enterprise.

Specifically, the Commerce Department promises, through a high official, to "properly consider legitimate American interests."

The Export-Import Bank, Vice President Walter C. Sauer declares, will bear in mind the U.S. industries' objection to the Japanese development at a time when existing pulp and lumber firms in the U.S. have an ample supply and are eager for markets.

But despite various past denials, the door is definitely not shut to the Japanese project to borrow a proposed \$30,000,000 in Washington to build mills in Sitka.

New Information

Inquiries made by PULP & PAPER have brought forth more enlightenment on this highly controversial issue than has been published anywhere to date.

Authoritative views of the State Department in Washington, also the Defense Department, and of others with important influence have been obtained. In some cases these views are revealed here for the first time.

One very high and influential government authority has told PULP & PAPER that he believes that if the Japanese comply with all restrictions, and approach a good American company, the latter would be able and willing to provide all of the necessary capital and would ask only that the Japanese give the company a contract for pulp for probably 25 years.

In the United States the only reports

published on recent activities in Japan were based on an AP dispatch which told of plans of 34 rayon, acetate, pulp and lumber firms to borrow the \$30,000,000 from U.S. private or federal banks.

A later report, sent to PULP & PAPER from Tokyo, is this news item in *Japan News*, of July 29:

"Toshitsugu Matsui, managing director of the Chemical Textile Association, will have a share of Yen 107,500,000 in the Alaska Pulp Development Co., to be capitalized at Yen 375,000,000 it was learned yesterday. It was previously decided that 13 chemical fiber companies would pay Yen 200,000,000.

"The remainder—Yen 67,500,000—will be subscribed by the following pulp, paper and lumber companies: Kokoku Rayon Pulp Co.; Honshu Paper Co., Mitsubishi Paper Co.; Takachiho Paper Co.; Mitsui Lumber Co., Akita Lumber & Forestry Association.—Jiji."

Also sent to PULP & PAPER was this report from *Nippon Times*:

"A plan to take advantage of Alaskan pulp resources has got under way in Japanese business circles.

"Promoters of the projected Alaska Pulp Development Co. met at the Industrial Club in Marunouchi, Tokyo, July 20, and decided on its articles of incorporation and authorized capital of Yen 1,500,000,000 (approximately equal to \$4,166,666).

"The meeting elected Tadao Sasayama, former chairman of the now defunct Holding Company Liquidation Commission and present chairman of the nongovernment Forest Resources Council, as board chair-



ALASKA TIMBER ON TONGASS NATIONAL FOREST—this spruce and hemlock stand is typical of timber in Sitka Pulptimber Allotment of U.S. Forest Service which Japanese want.

man, Junichiro Kobayashi, official of the latter Council, was elected president. A general meeting of the company was set for early August.

"The company plans an investment company to establish an American corporation to be called Sitka Lumber and Pulp Co., in Sitka, Alaska.

"Mills capable of producing 3 million cu. ft. of lumber will open operations in the initial year and produce 100,000 tons of pulp annually from the fourth year of its establishment. The company is backed by 13 chemical fiber companies, two lumber and four pulp manufacturing companies."

One of these participants, Kokoku Rayon Pulp, with one mill, is one of Japan's "Big Five" in producing market pulp. Honshu Paper Co., another subscriber, has six mills and rates as the third biggest paper manufacturer. It added a new newsprint machine just a year ago (see PULP & PAPER's 1953 WORLD

JAPAN'S SITUATION - THE BACKGROUND

Here are background facts for this exclusive article:

Japan's loss of timberlands in Manchuria and lower Sakhalin to Soviet Russia reportedly has created a critical situation. At its present rate of consumption Japan figures its own stands of softwoods will last only 15 years, but a U.S. industry representative says Japan has plenty of wood but it is remote or costly to log and much of it is being misused.

It wants pulp to put it back again in the world market for rayon pulp.

The Japanese see Alaska as their "nearest possible" source of timber.

But today both American and Canadian lumber and pulp manufacturers have an ample supply, are looking for markets.

Japan has inadequate foreign exchange. But it figures on borrowing from Uncle Sam for a mill at Sitka, Alaska.

If there is going to be subsidy—some American producers ask—why not subsidize foreign markets for existing pulp supplies—as the government does for cotton?

WHAT YOU WANT IN A SCREEN IS WHAT YOU *Get* IN THE BIRD VIBROTOR SCREEN

Capacity

60 to 90 tons of hard kraft per day at 1.5 to 1.6% consistency.

60 to 80 tons of semi-chemical with .018" cut plates.

100 to 140 tons of deinked stock at 1.1 to 2.0% consistency.

Screening Quality

the Vibrotor Screen's unique combination of rotary and vibratory action imparts a *circular* screening motion that results in utmost screening effectiveness as well as capacity.

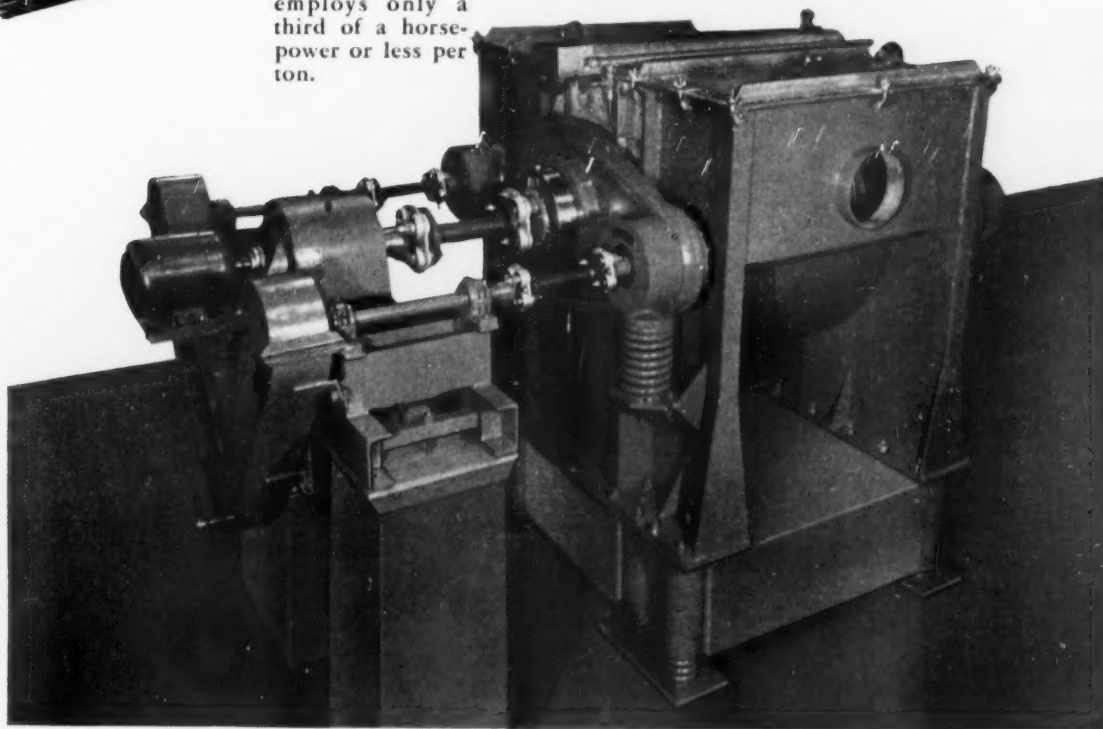
Simplicity

there is nothing complicated about Vibrotor Screen design, construction or operation. Screening action adjusts itself automatically to the screening requirements of the stock. No change in vibration amplitude has to be made. The Screen is accessible, easy to maintain, employs only a third of a horsepower or less per ton.

On sulphate and sulphite pulps, in double dilution systems, on Asplund defibroted stock, on deinked stocks and on paper stocks that cannot be screened successfully by any other means, the Bird Vibrotor Screen is what you want.

May we give you the whole story?

Bird Machine Co.
South Walpole, Mass.



REVIEW NUMBER, Japan section). Mitsubishi, one of the other paper companies participating, has three mills and is another leading paper producer.

Defense Department News

Perhaps one of the most significant sidelights learned in all of this correspondence is this authoritative statement:

"Today, more than ever before, the Department of Defense looks upon the forest reserves of Alaska as a resource which can strengthen that important link in our national defense—a stable population in Alaska."

Besides reports from Japan that indicate Washington officials may have given encouragement to the efforts to organize a Japanese investment company, members of a Japanese mission to Alaska early this year stated that they were in a position to place a considerable amount of money in plants to supply them with timber products.

State Department Views

These authoritative views are expressed in behalf of Secretary of State Dulles, by probably his closest technical advisor on National forest matters in his own State Department:

"Perhaps lumbermen in the Pacific Northwest of British Columbia will make offerings attractive enough to discourage the Japanese industrial groups from combining their financial resources with new or existing American forest products enterprises.

"Perhaps the new pulp mill at Ketchikan will offer part of its production to the Japanese consumers.

"Perhaps concurrent Japanese investigations will find that other Pacific areas are able to supply advantageously priced woods which Japan can substitute for softwoods in certain industries.

"The United States has always considered Alaska's forest reserves as one of the chief sources capable of attracting permanent industries to place Alaska on a firm economic footing. For years the U.S. Forest Service has given wide circulation to proposals and prospectuses for pulp and lumber plants in Alaska and systematically made full information available to newsprint consumers, industrial leaders, etc. But these industries have been slow in materializing; construction was started on the territory's first pulp mill within the last year."

It has now been learned that half of the Japanese technical mission that went to Alaska early this year stayed on the West Coast to investigate possibilities of entering negotiations with some company in the Pacific Northwest or British Columbia. Persons who talked with these Japanese now say they are not at all sure Alaska would be chosen.

But the question of foreign exchange is still an obvious stumbling block. This raises the question of some kind of a subsidy for woodpulp around the world. Industry leaders who raise the question point out the subsidies for cotton, particularly, among other products. An indirect subsidy to help foreigners, and help the

Japanese in their wood supply crisis, would open markets for existing wood-pulp mills which are now definitely interested in foreign business.

Views of Export-Import Bank

In his letter to PULP & PAPER, Mr. Sauer, vice president of the Export-Import Bank, explained such a loan would be unusual, but did not close the door to it:

"Your letter of July 10, 1953 asks for the Bank's comments on a news dispatch relating to the development of a pulp and lumber operation at Sitka, Alaska. The dispatch apparently says that for this purpose a Japanese company would propose to borrow \$30 million 'probably from the U. S. Export and Import Bank.'

"I am sorry that I cannot cast any further light upon this matter, because this Bank has never had any approach from any quarter regarding the proposal to which you refer.

"Although under these circumstances I hesitate to offer any comment, it does appear to me upon reading your letter that the proposed project would hardly fall within the normal operations of the Export-Import Bank. This Bank does not finance development projects in the United States or any of our Territories, even though there may result a product intended ultimately for export.

"In the event of the proposal being brought to our attention, you may be sure that your views will be borne in mind.

"Very truly yours,
Walter C. Sauer, (signed)
Vice President"

Commerce Official Outlines Plan

Considerable information on the Japanese proposal and confirmation of the chances for a loan, under certain conditions, were contained in this letter:

"DEPARTMENT OF COMMERCE
OFFICE OF INTERNATIONAL TRADE
WASHINGTON 25, D. C.

"Mr. Albert W. Wilson,
Editor, PULP & PAPER,
Chicago, Ill.

"Dear Mr. Wilson:

"Your letter of July 10 addressed to Secretary Weeks, concerning Japanese plans to establish a lumber and pulp operation in Alaska, has been referred to this Division for reply.

There is enclosed, for your general information, a State Department press release of October 10, 1952, which details the background of the proposed Japanese project. The technical mission noted on page 2 of the release went to Alaska in January of this year. The mission was well received by local groups in Alaska and returned to Japan with a generally favorable report. The plan as now envisaged is to construct a sawmill in the first year, to start building a pulp mill in the second year, and to have a completely integrated operation by the fourth year.

"As you indicate, 13 chemical fiber companies, 19 pulp companies, and 2 lumber firms have been invited to join in a pro-

posed Japanese corporation, the Alaskan Pulp Co., which in turn would invest in an American corporation, the Sitka Lumber and Pulp Co. You further indicate that a news report mentioned that the Japanese may attempt to borrow \$30 million from the Export-Import Bank of Washington. We have no information regarding the financing plans of the Japanese, and the Export-Import Bank informs us that it has not been approached on the subject. If and when the Japanese apply to the Bank for a loan, this Department will very seriously consider the point you raise in this connection.

"With respect to your question concerning the use of Japanese labor in the Alaskan operation, it is believed that U. S. immigration laws will not permit Japanese workers to be employed on the project with the possible exception of some top management personnel. Insofar as the defense aspect of this proposed project is concerned, comment thereon might more appropriately be sought from the Department of Defense as the Department having primary concern in such matters.

"Please be assured that the Department of Commerce will continue to follow developments in this matter in order to make certain that legitimate American business interests are properly considered.

"Yours very truly,
D. A. Kearns-Preston, (signed)
Acting Assistant Director,
Far Eastern Division."

Alaska May Favor Plan

As for Alaska officialdom and the people of Alaska generally, they would assuredly effectively veto any attempt to import Japanese or foreign labor into Alaska, so that is no longer even an issue or point for discussion. But they are unlikely to oppose Japanese putting money into an American corporation. Americans have investments in companies all over the world, and especially big investments in a large number of Canadian pulp and paper firms, an Alaskan official pointed out.

Alaskan officials and Alaskan public would raise no serious objections to Alaska shipping pulp and lumber to Japan, if that materializes. Their leaders, when queried on this by PULP & PAPER, point out that the Pacific Northwest states have exported considerable quantities of pulp and lumber to Japan, and did so for many years. Why shouldn't Alaska have the same right of export? they ask.

These Alaskans say they would not take too seriously any contention that American industry or finance wants to get into the Alaska pulptimber production in order to serve American markets. They point out that for 25 years such efforts to interest Americans in this manner failed until the Ketchikan project materialized.

The Defense Question

So, if there would be any consideration given to withholding Alaskan timber for use in America, it would most likely be

(Continued on page 88)

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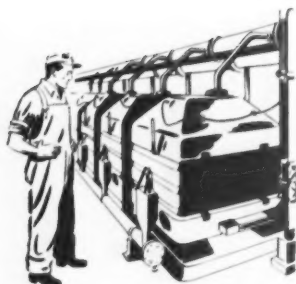
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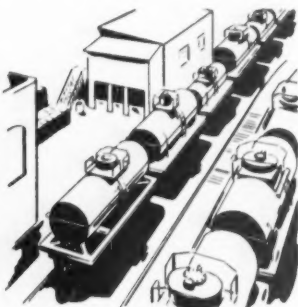
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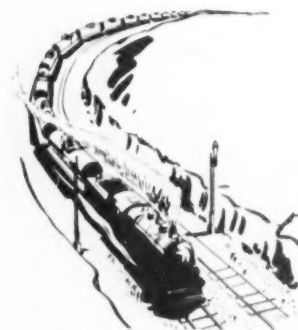
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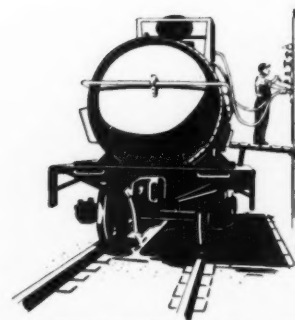


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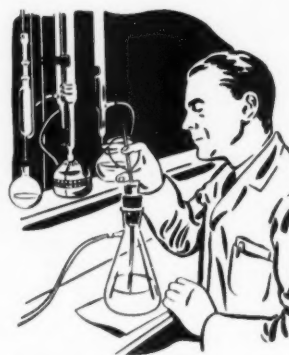
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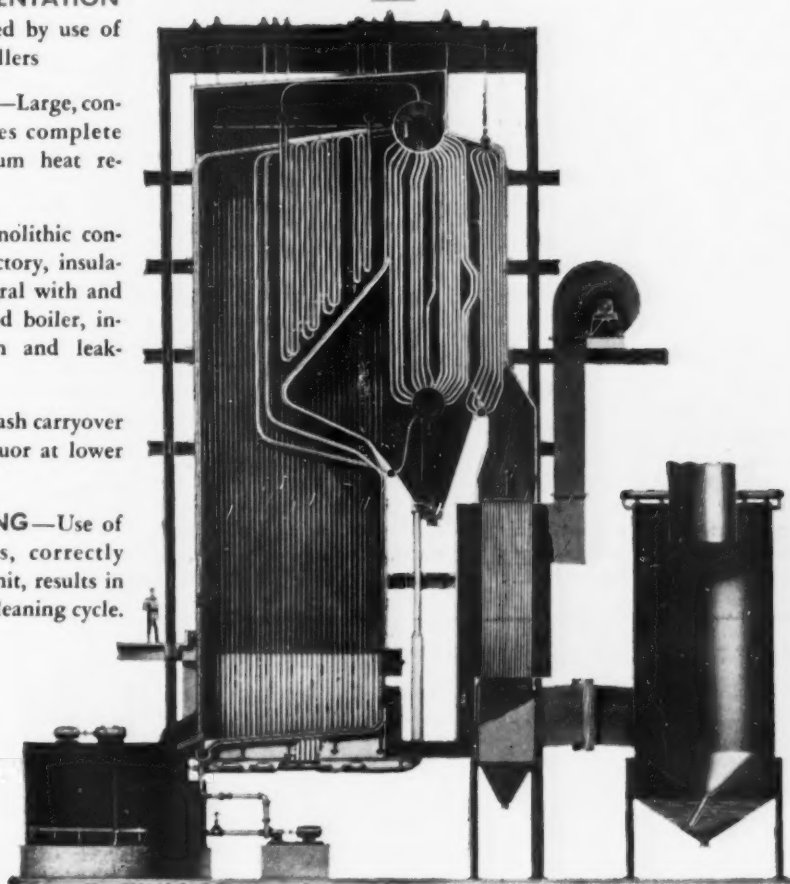
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MANAGEMENT "TOOLS"

ESSENTIAL QUALITIES -- RULES OF CONDUCT

By Dr. John T. Rettaliata

President, Illinois Institute of Technology and President, Armour Research Foundation.

(From an address recently given before the Chicago chapter of the American Institute of Chemists).

THE PROBLEM OF IMPROVING YOUR STATUS with management is one of universal interest.

It interests you because you have the normal human desire to work smoothly and effectively with the management in your respective plants. More than that, many of you will one day be members of that organizational echelon known as management. Perhaps a number of you have already made the transition.

I am not going to suggest ways and means of hoodwinking management into believing you are worth more than you really are. I am not going to try to sell you a sure-fire formula for successful apple polishing.

The phrase "improving your status with management" I take to mean a general course of action based more on basic attitudes than on activities designed to make an impression. It includes, certainly, an understanding of your employer's business and the part you play in its operation. More than that, it includes an attempt to see his objectives and make them your own objectives, if you consider them worthy. If you don't consider those objectives worthwhile, you probably should be looking for another job.

The role of management is to get things done through other people under its direction and guidance. To carry out this role, management requires certain kinds of knowledge and skills. Included in the

JOHN THEODORE RETTALIATA, now only 41 years old, heads largest engineering enrollment in North America. Illinois Institute of Technology is a result of merger of Armour and Lewis Institutes.



broad areas of knowledge that serve as management tools are organization, controls, incentives, and so on. Success in management depends in good measure on the extent to which it can grasp and use these management tools.

The tools of management differ considerably from the tools of chemists in that they are not nearly so well understood, even by the people who use them. The knowledge of how to manage is only now being developed and broadened.

Management "Blind Spots"

Much research effort is going into this field, and we can expect great progress in our lifetimes. However, for the present I think it is very important for us to realize how many of management's practices are based on tradition and how few on scientific fact.

Executives on the whole are aware of these deficiencies in the area of management. Much of the current research on management is sponsored by managers

who realize their blind spots and are frankly seeking enlightenment.

Until a scientific basis for management is worked out, however, you must rely on common sense and time-tried methods for understanding your present management's requirements and adjusting yourselves to them.

To begin with, there are the personal attributes that give the first, and often the most lasting, impressions of you. Your general health is perhaps the most basic. Maintaining good health is a part of the service management expects of you because it guarantees reliability. More than that, it is the basic factor in presenting a good personal appearance.

You can't dress like a million dollars every day, and management doesn't expect you to. But you can be neat, clean, and orderly in whatever concerns your person. If a person is slovenly in appearance, it is only natural to assume that he is slovenly in his work.

Almost as important is the pleasing effect of change in your costume. If you always wear the same blue suit, the same tie, and the same hat, you don't do justice to your personality. Change gives the impression of youthfulness, and youthfulness, at whatever age it shows itself, implies vigor and enthusiasm.

These things are elementary. I only call them to your attention because, basic as they are, you must be constantly aware of them to some extent, or other attempts at improving your status with management are likely to fall pretty flat.

Qualities of Management

There are other essential qualities, and it is well to keep a checklist of them and to rate yourself from time to time. Better still, ask your laboratory associates, your daughter—even your wife, if you dare—what they like or dislike about you. This takes courage, but it may reveal deficiencies you wouldn't discover otherwise.

I'm going to give you briefly just such a checklist:

1) *Do you know your calling?* The first requisite for success is a knowledge of the science and practice of your field. Your instructors in school and college did their best to impart their knowledge to you, but now it is your own responsibility to keep up with current developments.

2) *Can you deal with people?* Results are accomplished through the efforts of people working together. You must get the job done, but you must do it in such a way that good relations exist throughout your organization.

3) *Can you overcome adversity?* A professional career is not all clear sailing.

ABOUT THE AUTHOR AND ILLINOIS INSTITUTE OF TECHNOLOGY

Now only 41, John Theodore Rettaliata has been president of Illinois Institute of Technology in Chicago since last year.

He also is president of Armour Research Foundation of the same institute and of the Institute of Gas Technology. He is a director of the First Federal Savings & Loan Association of Chicago and of the George M. Pullman Foundation.

Born in Baltimore, he earned bachelor and doctor of engineering degrees at Johns Hopkins, and was with Allis-Chalmers from 1936-45, finally as manager of its research and gas turbine development division. He is an international authority on steam and gas turbines and jet propulsion, and since joining Illinois Institute as a professor in 1945, he became dean of engineering in 1948, and president in 1952. Meanwhile, he recently was associate director of an Air Force high priority research project, and during the war inves-

tigated British jet propulsion for the U.S. Navy, and later obtained complete information for the U.S. on German submarine steam turbines, never used under water before. He has won several high awards for gas turbine work.

Illinois Institute of Technology has the largest undergraduate and also largest combined undergraduate and graduate enrollment of engineering students of any educational institution in North America. The Institute was formed in 1940, through merger of Armour Institute of Technology, organized in 1892 by Philip Danforth Armour, and of Lewis Institute, founded in 1896 under the will of Allen C. Lewis. It has assets of \$18,748,000, operates on an annual budget of over \$10,000,000 and owns 85 acres at Technology Center in Chicago.

Total student body is 7,148 of which 5,541 are engineering students.

How you react when things go wrong is sure to have a great deal to do with your success or failure.

4) *Are you adaptable?* We cannot create an environment to suit ourselves exactly, but we can adapt to the situations we find. Specifically, you should react positively when asked to assume responsibility, learn a new skill or specialty, or move to a new position or place.

5) *Do you have foresight?* The world needs and will reward men of vision and creative ability. Such men develop new products, new management methods, new business enterprises.

6) *Are you emotionally mature?* If you are, you can see human situations in their proper perspective, think objectively on human problems, and analyze yourself without being unduly critical. You will stand up for your ideas but realize that you cannot always have your own way.

7) *Can you be trusted?* Be careful before answering "yes" to this one. It involves more than counting all your golf strokes. Appreciation of professional ethics, loyalty to your company, and proper regard for confidential information are characteristics of a professional man, and they add up to integrity.

8) *Are you developing business judgment?* Ability to size up a situation and reach a reasonable conclusion is important to you and to your management. If you work in industry, you work in a business environment. Economic factors will influence most of your decisions, so appreciation of those factors is imperative.

9) *Can you express your thoughts?* Getting good ideas is only half of your creative responsibility. You must be able to sell them, and to do so you must be able to use language convincingly.

To this checklist each of you could add points of your own. The important thing, however, is to formulate a picture of what your management expects of you and develop yourself accordingly. What that amounts to, of course, is seeing yourselves as others see you. The picture may be appalling at times, but take a good look and do it often. Perhaps it won't make a new man of you, but it will improve the old one.

Basic Rules of Conduct

With our checklist of essential qualities in mind, we can proceed to a few basic rules of conduct on the job. The list is fragmentary and incomplete. I give it only to suggest the existence of basic laws that cannot be violated too often with impunity:

1) *When given a new position, apply your best efforts to your early assignments no matter how routine and trivial they may seem.* Don't worry unduly about whether your present job is a strategic stepping stone to a better job. Generally, if you take care of your present assignment well, your future will take care of itself.

2) *Avoid the appearance of uncertainty.* Never state an opinion or start promoting an undertaking until you have obtained and studied the facts of the case.

Where Industry Must Look for Most Engineers

This table on engineering enrollment is of special interest to management in the pulp and paper industry because of the current shortage of engineers and technicians. The running deficit of qualified engineers in industry is estimated at over 60,000.

Of 193 schools in the U.S. and eight more in Canada, the following 15 are shown enrolling the greatest number of engineering students:

	Under-graduate	Graduate	Total
1. Illinois Inst. of Tech.*	4,621	920	5,541
2. Brooklyn Polytech.*	3,190	1,050	4,240
3. Purdue	3,808	313	4,121
4. University of Illinois	3,672	378	4,050
5. College of City of N. Y.*	3,336	307	3,643
6. Mass. Inst. of Tech.	2,384	1,027	3,411
7. New York University	2,278	955	3,233
8. Georgia School of Tech.	2,956	157	3,113
9. Cincinnati	3,049	20	3,069
10. Penn. State	2,547	207	2,754
11. Newark	2,114	590	2,704
12. Texas A. & M.	2,509	68	2,577
13. Rensselaer Polytech.	2,186	294	2,480
14. Ohio	2,202	274	2,476
15. Iowa State	2,094	113	2,207

* Majority of undergraduates are evening and special students. All others, majority are day students.

3) *Don't be afraid to express yourself and present your ideas.* This is the logical follow-up of the preceding rule. Be sure of yourself, then make your ideas known.

4) *Before asking for approval of any major action, have a definite program worked out to support it.* Management usually refuses to approve any proposal if the practical details of carrying it out have not been thought through carefully and completely.

5) *Be extremely careful of the accuracy of your statements.* You never will achieve the confidence of management by habitually guessing when you don't know the answer. It is important to have the answers, but wrong ones are worse than none at all. If you don't know, say so, but be sure to add, "I'll find out."

6) *Keep your immediate superior informed of all significant developments.* This certainly can be overdone, but more often it is neglected. For every time your boss shouts "Don't trouble me with so many details," there probably are three times he groans, "Why, oh why, doesn't someone tell me these things."

7) *Never invade the operational domain of an associate or another division.* If you do, it is certain to be resented and can cause no end of trouble.

8) *When you are dissatisfied with the services of another section, make your complaint to the individual most directly responsible for the function involved.* Complaints made to a man's superiors, over his head, create much ill will and should be resorted to only when direct appeal fails. You won't enhance your reputation by making such complaints without giving the defendant a fair chance to correct the grievance.

9) *In dealing with outsiders, remember that you represent the company.* You may be only a new employee, but most outsiders will regard you as a legal, financial, and technical agent of your company. Don't make any commitments someone else will have to retract or make good on.

These rules are only variations of general rules of conduct that if adhered to will improve your relations with anyone.

The only reason for giving them any status as rules is that standards of considerate conduct are too easily forgotten if not formulated rather specifically.

As we progress in applying science to management, the rules should become easier to follow. In other fields, predictability of the results of certain actions increases in direct ratio to the amount of knowledge available in that field. The same will be true in management.

Reducing Management to Science

Not much progress has been made so far in reducing management to a science. There are indications, however, that this situation is about to change.

Recently, *Modern Industry* questioned a sampling of business executives, management consultants, and educational leaders to determine their impressions of current management-development programs. It is interesting that the survey showed very general dissatisfaction with present methods of training new men for management. It did, however, turn up the following suggestions of better things to come:

1) Tests of temperament and interest show signs of developing to the point where they will be much truer guides in selection of the right man for training.

2) There seems to be developing a technique for classifying industries into "types" of business that require "types" of management.

3) There is better understanding of the industrial psychologist and of his contributions. Wider and more effective use of this specialist will provide a scientific way to assist men who are technically good but who are in need of confidential coaching in personality makeup and in handling people.

4) Many executives are coming to realize that organizational structure and operation in their businesses must be sound before men can be expected to grow. This corresponds to tilling the soil so seed can be sown.

5) More top men in companies are joining training programs and applying the things they learn to themselves. The National Training Laboratory in Group Development, for example, reports that substantial numbers of presidents, vice presidents, and works managers have been attending its classes in the past three years. Previously, attendance was limited almost entirely to personnel directors and directors of company training programs.

So, your efforts to improve your status with management are only half the picture. The other half is that management is trying to improve its status with you. One of these days, you and management are going to be meeting halfway to an extent never realized before.

You still must do your half, and your half will still be the responsibility of seeing that whatever you do in your job is done as competently, as carefully, and as intelligently as you know how. The more things change, the more that fact will hold.

Pulp and Paper Leads

Pulp and paper leads all industries in Washington State according to a new state statistical safety report. The industry's 9.84 frequency record for 1952 is 60% below the 10-year index.

PROMOTIONS—ELECTIONS—NEW ACTIVITIES—ACROSS COUNTRY



THESE MEN figured prominently in industry news the past month (left to right):

W. H. GRAEBNER, Chief Mill Mgr. of Marathon Corp., who has been appointed Production Mgr. for four big Marathon mills—Rothschild, Wis., Ashland, Wis., Menominee, Mich., and Oswego, N.Y.—and later will head manufacturing in a fifth—the recently acquired Northern Paper Mills, of Green Bay, Wis., which is now a subsidiary and becomes a division of Marathon on Nov. 1. Mr. Graebner was former Mill Mgr. at Menasha, Wis.

CHARLES H. VICKERY, who has been promoted to Vice President in charge of Sales for E. D. Jones & Sons Co., Pittsfield, Mass., manufacturers of refiners, jordan and other paper making equipment. Mr. Vickery has been Sales Mgr. since 1947 and prior to that was a Sales Engineer and traveled all over the U.S. and in other countries for E. D. Jones.

JOHN B. KOHLER, ex-President and Chief Engineer of the Kohler System Co., and inventor of that system of winding and rewinding with full speed roll change, has opened offices at 218 Woodstock St., Crystal Lake, Ill., as Consultant to paper, converting and printing industries. He continues to direct sales and engineering for Kohler equipment in Canada, which is manufactured by Pasco Ltd., Port Arthur, Ont. and F. E. Palmer & Co., Montreal.

O. W. FROST, promoted from Plant Mgr. of Forest Fiber Products Co., woodpulp hardboard mill in Forest Grove, Ore., to Gen. Mgr. of the firm, heading both manufacturing and sales. He designed the Forest Grove plant, built in 1948. He was former Director of Wood Fiber Research for U.S. Gypsum, Chicago. G. E. Tower has succeeded him as Plant Mgr. at Forest Grove.

HAROLD BOESCHENSTEIN, elected to succeed the late F. K. Morrow as a Director of International Paper Co. He is Pres. of Owens-Corning Fiberglass Corp. and during World War II became acquainted with many officials in this industry as Forest Products Bureau Director of WPB.

DR. JOSEPH E. ATCHISON, recently Mgr. of a board mill and bagasse pulp pilot plant in Puerto Rico and with long experience in the pulping of vegetable fibers, has joined the executive staff of Parsons & Whittemore, Inc., New York, whose "Private Point 4" program to engineer, build, equip and staff pulp and paper mills all over the world, especially using straw, bagasse, eucalyptus etc., was announced in these columns previously. Dr. Atchison is former ECA Chief, Pulp & Paper Branch.

VERNON L. TIPKA, promoted to Vice Pres. and Director of St. Lawrence Paper Corp., Norfolk, N.Y., manufacturers of newsprint and groundwood specialties, according to Pres. James L. Knight, and John S. Knight, of Knight Newspapers Inc. Mr. Tipka was former Asst. to the President and held key posts also in the past on Oregon and Michigan mills; was former Secy-Treas. of Newsprint Bureau.

New Crossett Mill

The South will have a new pine-and-hardwoods bleached paperboard cylinder machine mill of 150 tons capacity at the Crossett Industries operations, Crossett, Ark.

Crossett's present kraft paper operations with two Fourdrinier machines produces 400 tons daily. The board will be for food containers and other packaging. Completion is set for mid-1955.

TIME TABLE IN THE SOUTH

WHILE COMPLETION is imminent for several Southern mill projects, there appears no let-up in sight in construction that extends to the mid-year of 1955. Mills and tentative scheduling for production are as follows, according to a survey by PULP & PAPER:

Co. Location	Tonnage Daily	Product	Completion Date
Ruberoid Co., Dallas, Tex.	5	Saturating paper	1953
St. Joe Paper Co., Port St. Joe, Fla.	800	Paperboard	1953
National Container Corp., Valdosta, Ga.	500	Linerboard	1953
International Paper Co., Natchez, Miss.	300	Dissolving pulp	1953
International Paper Co., Bastrop, La.	70	Paper	1954
*Valite Corp., Lockport, La.	60	Newsprint	1954
Union Bag & Paper Corp., Savannah, Ga.	250	Pulp and paper	1954
Bowaters Southern Paper Corp., Calhoun, Tenn.	280	Kraft pulp	1954
.....	300	Groundwood	1954
.....	360	Newsprint	1954
Buckeye Cellulose Corp., Foley, Fla.	200	Dissolving kraft pulp	1954
Southern Paperboard Corp., Pt. Wentworth, Ga.	—	Semi-chem. pulp	1954
Rome Kraft Corp., Rome, Ga.	600	Container board	1954
Rayonier Inc., Jesup, Fla.	300	Dissolving pulp	1954
East Texas Pulp & Paper Co., Evadale, Tex.	300	S10, kraft bleached kraft pulp (later possibly board)	1954
Olin Industries, Spencer, La.	200	dissolving kraft pulp	1955
Crossett Paper Mills, Crossett, Ark.	150	bleached neutral sulfite paperboard	1955

* Described as pilot plant using cane bagasse.

FAR SOUTHWEST'S FIRST WOODPULP MILL

Strange as it may seem, a woodpulp mill is to be built in the far Southwest of the United States. It will be the first one in the broad expanse from East Texas and Oklahoma to Northern California and the Pacific Northwest and is now under construction at Flagstaff, Ariz.

After first reports of this Cocino Pulp & Paper Co., with J. M. Potter as manager, PULP & PAPER contacted the U.S. Forest Service station at Tucson, Ariz., and it was learned that Ponderosa pine thinnings from Coconino National Forest are to be used.

This will be a mechanical groundwood type of mill of only 25 tons initial daily capacity. Wet lap will be the initial product for paper processing elsewhere, perhaps in California or other nearby mills.

Raymond Price, director of the USFS station at Tucson, told this magazine:

"There are sufficient thinnings of pine available in the Coconino Forest to support a mill many times this capacity. The Forest surrounds Flagstaff. We regard the development as significant as it provides the first market in the Southwest for material below sawlog size."

Phoenix had a hardboard and insulating board semi-chemical mill now closed and so this will be the only mill of any kind in Arizona, New Mexico, Nevada and Utah. Colorado has only a waste paper board mill and there are no mills in other states farther north except Idaho.

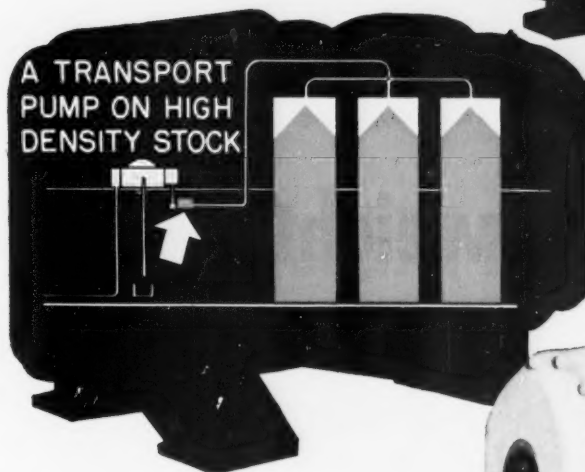
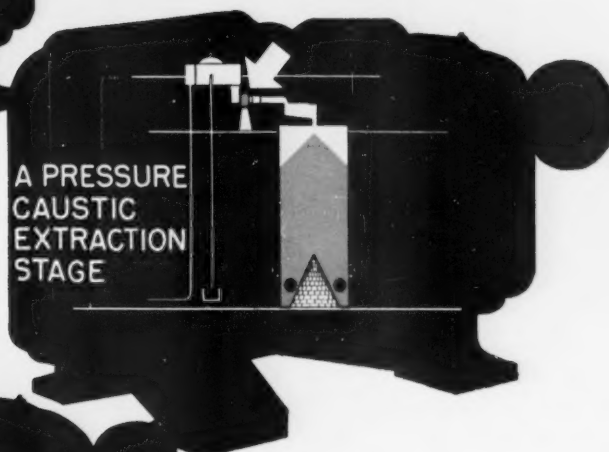
Powell River Record

Powell River Co.'s 24-hour production record was exceeded May 6 when the mill produced 1,170 tons of newsprint.

THICK STOCK PUMP



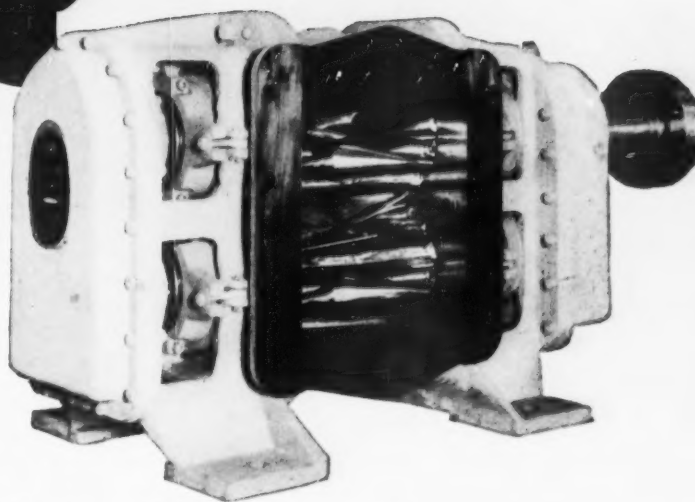
**PUMPING
10%-17% PULP**



SERIES - 300 *
SERIES - 500 *

This unit is a positive displacement type pump specifically designed to handle pulps at high densities. The conical profile of its synchronous rotors permits the pumping of stock at densities above 10% A.D.—with lowest horsepower per ton—and no fibre damage. Truly the modern way to handle all types of pulp.

*Tons per day



IMPROVED MACHINERY INC.

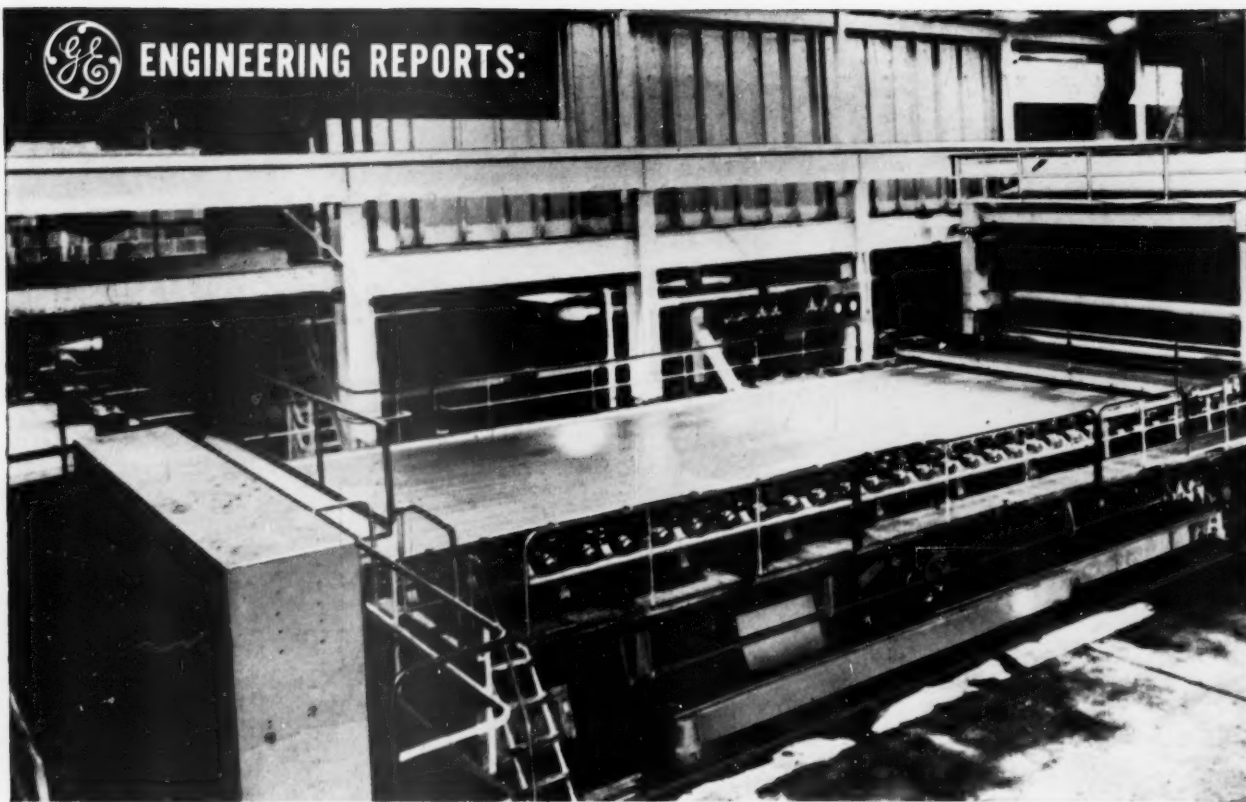
NASHUA, NEW HAMPSHIRE

Sherbrooke Machineries Limited manufacture similar equipment in Canada.

J-35



ENGINEERING REPORTS:



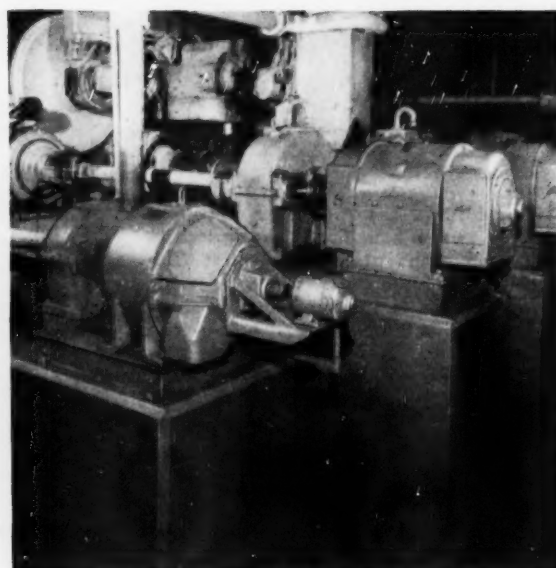
INCREASED HIGH-QUALITY PRODUCTION pours from Crossett's lightweight pick-up machine at speeds up to 1900 ft./min.

A G-E sectional drive helps keep the output high by maintaining draws accurately, and responding to adjustment quickly.

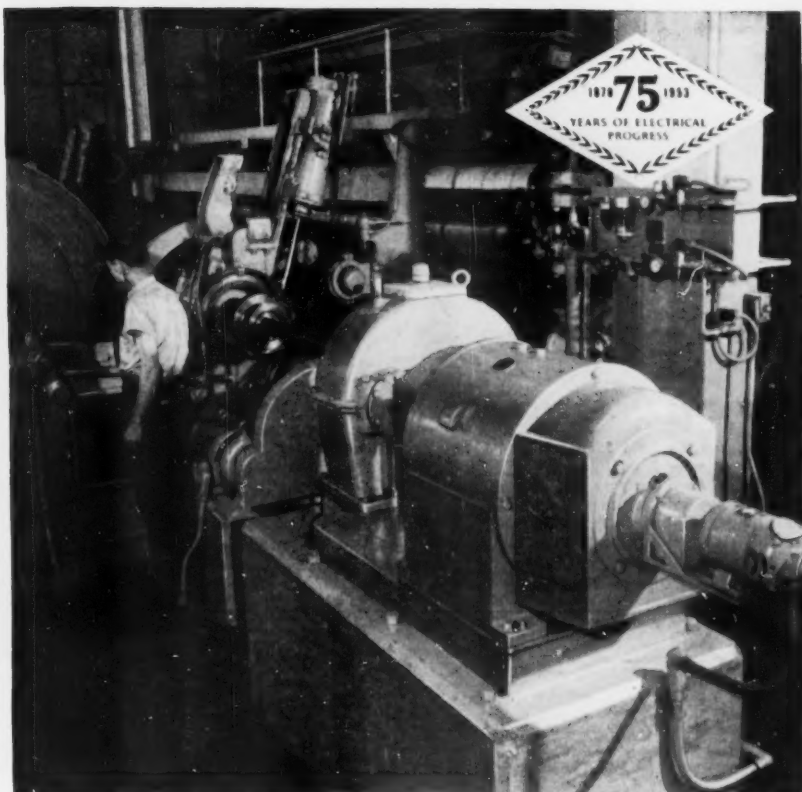
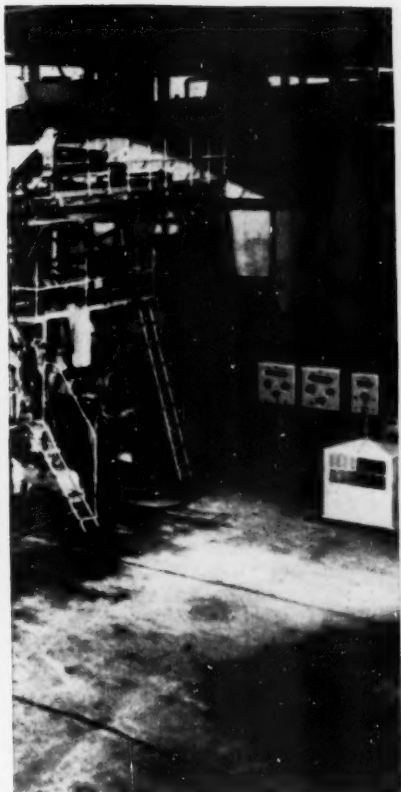
First high-speed lightweight pick-up



MULTIPLE-GENERATOR MEANS INDIVIDUAL DRIVES. Each section operates efficiently with fast, accurate control. Starting generator, with its complicated switching, is eliminated.



OPERATION IS CONVENIENT, PRECISE. Smooth press drive (30-hp G-E motor) and clover leaf drive (150-hp G-E motor) have fast slack take-up control for quick machine adjustment.



DRIVE FLEXIBILITY AT REEL—with more accurate control of sheet speed and tension—results in more uniform rolls. Tensiometer control of sheet tension is readily added.

averages 171 tons per day at Crossett

**216-in. machine at Crossett Paper produces
high quality kraft at speeds up to 1900 ft./min.**

Production figures at the Crossett Paper Mill, Crossett, Ark., prove today's high-speed suction pick-up machines can turn out lightweight kraft at record rates.

In 1950, the first mill of this type went into operation at Crossett. Since then, this mill has operated at normal speeds of 1500-1800 ft./min., 24 hours a day, every day, with a minimum of unscheduled maintenance.

The mill's specially designed General Electric sectional drive, which increases flexibility by providing

an individual motor and generator for each section, has helped reduce machine outages. With this drive, sections can be operated independently or together to speed wire and felt changes. Since section ammeters often indicate mechanical difficulties before they arise, preventive maintenance techniques can be used. The result: greater continuity of production.

If you would like to learn more about how G-E drive engineering can be applied to your paper machines—whatever the grade of paper—contact your G-E Apparatus Sales Office. General Electric Company, Schenectady 5, N. Y.

655-14

Engineered Electrical Systems for Paper Mills

GENERAL  ELECTRIC

LEADERS' COAST TOUR

EMPHASIZES GROWTH OF PULP INDUSTRY

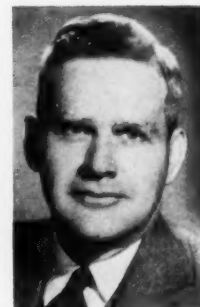
ABOUT FIFTY TOP LEVEL executives of this industry—all of them presidents or board chairmen or vice presidents of almost as many companies—are planning to spend the middle week of September in an unusual series of meetings and tours of some of the biggest and most modern mills and some of the biggest and most spectacular mountain Tree Farms in the world.

The meetings are confined to one day and place—Sept. 15 in Seattle's New Washington Hotel. They are sponsored by the U.S. Pulp Producers Association, Inc., which today is representative of one of the really great basic industries of this nation—more than one-tenth of the wealth generated annually by the entire industrial economy of the United States is now based upon production and con-

THIS MAP SHOWS APPA'S PACIFIC NORTHWEST WOOD TOUR

The 3-Day Tour, starting from Seattle Sept. 16, to be taken by 50 or more Presidents, Chairmen and other top officers of American pulp and paper firms, will follow the route shown on this map by PULP & PAPER artist. Buses will take them to Nisqually Tree Farm (1), then across Puget Sound via the famous Tacoma Narrows bridge, lunching at Mason Lake (2), then to Simpson Logging's headquarters

(3), and operations (4), to Olympia (5) overnight. Next day to Weyerhaeuser's St. Helens Tree Farm (6), lunching at Camp Baker in foothills of snow-capped Mt. St. Helens, then to Longview's Hotel Monticello overnight. Longview Fibre Co.'s plant (7), the Crown Zellerbach Tree Farms (8) near the Oregon coast and to Portland, Ore. (9), completes the tour.



SYDNEY FERGUSON (left), of New York, Chairman of The Mead Corp., and President of American Paper & Pulp Ass., who will be Toastmaster at banquet in Seattle, Wash., Tues., Sept. 15, at which U. S. Pulp Producers Assn. will be hosts to top industry executives from all over U.S.

J. PHILIP WEYERHAEUSER JR. (right), of Tacoma, Wash., President of Weyerhaeuser Timber Co., who will be the featured speaker at the banquet in Seattle's New Washington Hotel. He will discuss "Tree Farms and Your Future."

version of woodpulp.

The preceding day—Mon. Sept. 14—the USPPA and its guests will make 56-mile round trip bus tours to the three mills in Everett—sulfite, kraft, modified kraft and groundwood operations. Notably, they will see Weyerhaeuser's new bleached market kraft pulp mill, just starting up, and Scott's projected multi-machine tissue mill now being built alongside its Soundview Pulp Division, which is the biggest sulfite operation in the world.

A 3-day woods tour starting on the morning of Sept. 16, also by bus, will take the party to the Olympic Peninsula, then into foothills of snowcapped Mt. St. Helens, then along the Columbia River and into mountain forest areas of Northwest Oregon. Successively, these are locales of operations, nurseries and research forests of Simpson Logging Co., Weyerhaeuser Timber Co., and Crown Zellerbach Corp. Wood utilization methods of Longview Fibre Co. also will be shown.

A map by a PULP & PAPER artist shows the route of the 3-day tour, and points of interest are all identified.

One-Day Alaska Round Trip

A commercial plane is to leave Seattle Sat. morning, Sept. 19 for Annette Island, Alaska, airport, a few miles from the Ketchikan Pulp Co. high alpha magnesia base sulfite mill now under construction at Ward Cove. The industry executives who take advantage of this tour, could be flown back to Seattle the next night.

Steel work is well up, power facilities are built, and dock, etc., are on view at Ward Cove, six miles from Ketchikan. The U.S. Forest Service Tongass forests of spruce and hemlock in that area, which are earmarked now for substantially per-

petual use of this mill, will be viewed by those making this tour. Puget Sound Pulp & Timber Co. and American Viscose Corp. are joint principal owners of this project, bringing to Alaska its first year-around industry.

This year marks the 100th anniversary of opening up of logging in the Shelton, Wash., area in the Olympic Mountain foothills, where much of the first day of the woods tour will be spent. Here is where the 50-year old Simpson Logging Co. operates. It entered the fiberboard industry since World War II with a coated insulating board plant in Shelton and last year acquired ownership of Everett Pulp & Paper Co. Rayonier, Inc., which built the first market pulp mill in the west in the '20's at Shelton, and has been a pioneer of the rayon pulp field, is another principal operator in this area.

The next day will be a spectacular and scenic one in the St. Helens Tree Farm of Weyerhaeuser, largest private owner of standing timber in the world, and reputedly operating at lowest proportional wood cost. Intensively integrating its forest operations, it now makes paperboard, kraft, market pulp and several bark products, as well as lumber, plywood and sulfite pulp for market, its earlier products.

Crown Zellerbach, second largest paper company in the world, and also solidly backed by extensive well-managed forests, will have thrills galore to show the visitors in its Oregon Tree Farms.

The Forest Policy Committee of the American Paper & Pulp Association is sponsoring the woods tour, with Howard Morgan, vice president and pulp division manager of Weyerhaeuser, as chairman of the tour committee. Serving with him are Ed Stamm and George Drake, logging vice presidents of Simpson and C-Z, respectively, and Ed Heacox, Weyerhaeuser managing forester.

Pulp Producers Growing

It is significant that the West Coast meetings of the Pulp Producers, in Seattle, on the 15th, come in a year that this organization has added six new members making over 1,000,000 tons a year of woodpulp, and now has 55 company members. It amended its by-laws in order to increase its executive board by five to a total of 20 directors, whose pictures are shown accompanying this article. Amor Hollingsworth of Boston has the distinction of being the only "charter" member of the board who was serving in 1933 when it was formed and Downing P. Brown, also of Boston, was a member soon afterward, and still serves.

For several years now the company membership of the Pulp Producers has shown a steady annual increase of about 1,000,000 tons each year. The U.S. production of this vital commodity for peace and war has steadily increased over the years, keeping pace with increased consumption. The National Production Authority stated only recently that "the U.S. is growing more and more independent of overseas woodpulp." Total consumption in 1952 was over 18,000,000 tons, more than twice what it was in 1939.

EXECUTIVE BOARD OF U. S. PULP PRODUCERS ASSN. INC.

Meeting—Sept. 15—Hotel New Washington—Seattle



Director-at-Large
BENTON R. CANCELL
Rhinelander Paper Co.
Rhinelander, Wis.

Director-at-Large
CHARLES H. CONRAD
Rayonier Inc.
San Francisco

Director-at-Large
ALEXANDER CALDER Jr.
Union Bag &
Paper Corp.
New York City

Director-at-Large
WALKER HAMILTON
Riegel Paper Corp.
New York City

Regional Director
for Lake States
LYALL STILP
Kimberly-Clark Corp.
Nashua, Wis.



Director-at-Large
GABRIEL J. TICOULAT
Crown Zellerbach Corp.
San Francisco

Director-at-Large
LAWSON P. TURCOTE
Puget Sound
Pulp & Tbr. Co.
Bellingham, Wash.

Executive Director
JAMES L. RITCHIE
New York City

Regional Director
for Middle Atlantic
DONALD S. LESLIE
Hammermill Paper Co.
Erie, Pa.

Regional Director
for New England
DOWNING P. BROWN
Brown Co.
Boston, Mass.



Regional Director
for West Coast
L. KIEV LARSON
Weyerhaeuser Timber Co.
New York City

Regional Director
for South
STUART E. KAY
International Paper Co.
New York City

Director-at-Large
JAMES L. MADDEN
Hollingsworth &
Whitney Co.
Boston, Mass.

Director-at-Large
HOWARD E. WHITAKER
The Mead Corp.
Chillicothe, O.

Director-at-Large
GEORGE OLMSTED JR.
S. D. Warren Co.
Boston, Mass.



Director-at-Large
AMOR HOLLINGSWORTH
Penobscot Chemical
Fibre Co.
Boston, Mass.

Director-at-Large
JOHN STEVENS JR.
Marathon Corp.
Menasha, Wis.

Director-at-Large
G. WILLING PEPPER
Scott Paper Co.
Chester, Pa.

Director-at-Large
WILLARD J. DIXON
St. Regis Paper Co.
New York City

Director-at-Large
LAWRENCE W. STRATTNER
West Virginia Pulp
& Paper Co.
New York City



PLANNING AMERICAN PAPER & PULP ASSN. WEST COAST TOUR

THESE MEN ARE ARRANGING FOR VISIT of about 50 leaders of pulp and paper industries to Pacific Northwest. Left to right:

HOWARD MORGAN, Vice Pres. and Pulp Div. Mgr., Weyerhaeuser Timber Co., Chairman of Tour Committee planning 3-day tour of West Coast Woods Operations; EDWARD P. STAMM, Vice Pres. and

Logging Mgr., Crown Zellerbach Corp.; GEORGE DRAKE, Vice Pres. and Logging Mgr., Simpson Logging Co., and EDWIN F. HEACOX, Managing Forester, Weyerhaeuser Timber Co., all three serving on the Tour Committee with Mr. Morgan, and ROBT. S. WERTHEIMER, Vice Pres. and Mgr., Longview Fibre Co., whose mill will be host on third day of tour, showing its methods of waste wood utilization.

Only 1.9 million tons were imported in 1952, all except 360,000 tons from Canada.

More Independent U. S. Seen

"Expansion now under way or scheduled may mean the U.S. will be largely independent of overseas (European) pulp supplies," said the NPA.

Washington state, with 28 pulp mills, leads all states in pulp production (2,053,094 tons in 1951), over 30 percent more than the second place state, Louisiana. Maine is third. Oregon ranks eighth.

Even with rapidly increasing production, the pulp and paper industries are on a stronger and more stable footing in respect to forest resources than they were in 1939, when production was less than half. They have established scores of tree farms, placed many millions of pulpwood growth areas on a permanent basis of increasing crop yields. Better land management, plus use of more wood species, have

CLARENCE RICHEN, Chief Forester, Crown Zellerbach Corp., is pointing to a map of C-Z Tree Farms in northwest corner of Oregon. Darkened areas on map are large old growth, and lighter shades show second growth, cutover and planted areas. Wide mouth of Columbia River is at top, and Pacific Ocean at left. Some of this area will be toured by industry executives in mid-September. Scenes at right are typical of what they will see—note stumps after thinning in picture at top right.

been principal reasons for this brighter outlook for the pulp industries.

These are subjects to be discussed at the meetings in Seattle. The industry executives will hear that economic values keep pyramiding as woodpulp moves successively through various stages of conversion and of use, and into new markets. And, as a result of this, it will be emphasized that the economic future of America and her fiber-dependent industries are inseparably linked for better or worse. Enlightened management and enlightened government policies will make the outlook better.

After the closed morning session of the Pulp Producers board at the Hotel New Washington, an open meeting begins at 2 p.m.

Lawson Turcotte, president of Puget Sound Pulp & Timber Co. and president of Ketchikan Pulp Co., as well as a director of the Pulp Producers, will discuss "the outlook for cost-profit relationships."

Gabriel G. Ticoulat, vice president of Crown Z, and new member of the Producers executive board, will discuss "tomorrow's competition and the responsibility of sales executives."

James L. Ritchie, executive director of the association, will present the current

pulp situation.

That evening a banquet will be held at the hotel, with Sydney Ferguson, president of APPA, as toastmaster, and Phil Weyerhaeuser, Jr., president of Weyerhaeuser Timber Co., as featured speaker. He will discuss "Tree Farms and your Future."

Who's Who of Tour

The preliminary list of industry executives who have indicated they would attend either the Pulp Producers meetings or the Western Forestry Tour, or both, follows. This tentative list (as of August 12, 1953) also includes more than a dozen who said they would take the Alaska tour as well. Undoubtedly several more than those reported here will participate in these activities.

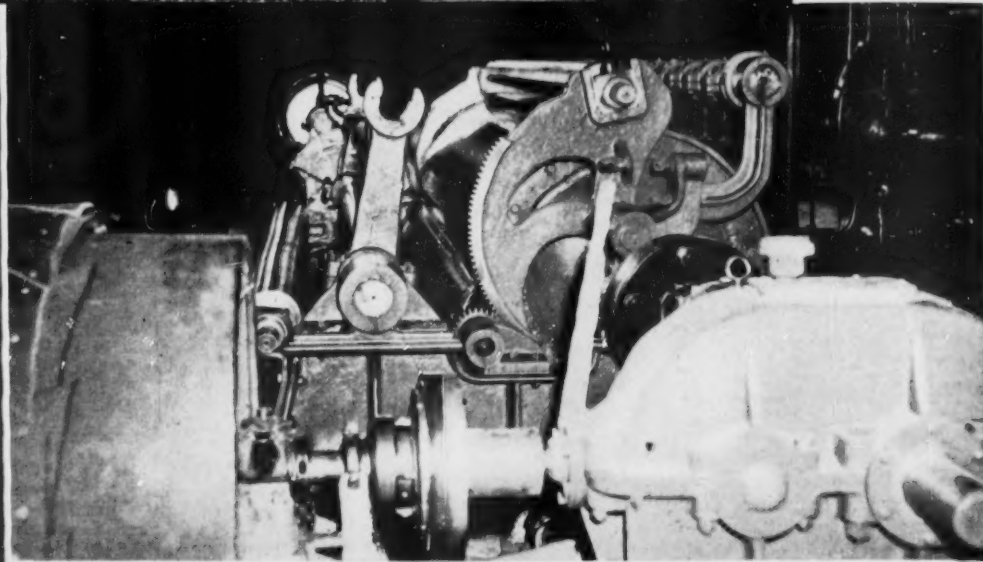
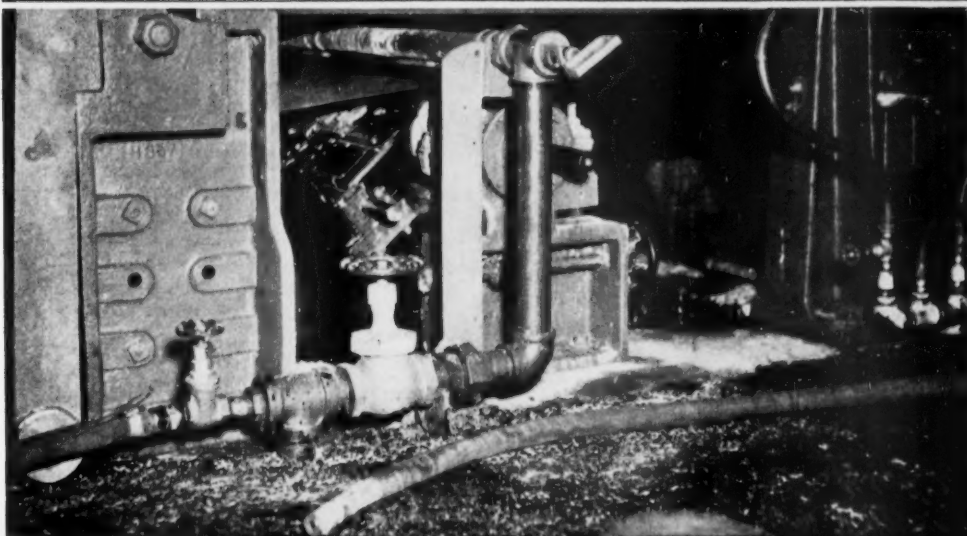
American Paper and Pulp Assn.—E. W. Tinker; American Pulpwood Assn.—W. S. Bromley; American Writing Paper Corp.—E. C. Reid; Bay West Paper Co.—W. J. Servotte; Blandin Paper Co.—C. K. Andrews; Brown Co.—Downing Brown, J. J. McDonald; Camp Manufacturing Co.—W. M. Camp; Cellulose Sales Co., Inc.—N. R. Johanson; Champion-International Co.—J. F. Raichlen; Crown Zellerbach Corp.—D. S. Denman, G. J. Ticoulat; Detroit Sulphite Pulp and Paper Co.

Eastern Corporation—Harold Holden; Everett Pulp and Paper Co.—A. B. Moody; Finch, Pruyn & Co.—L. A. Beman; Foster Paper Co. Inc.—T. Foster II, S. W. Foster; Gaylord Container Corp.—Vertrees Young; P. H. Glatfelter Co.—P. H. Glatfelter; Hollingsworth and Whitney Co.—J. L. Madden, M. L. Madden and Curtis M. Hutchins; Kimberly-Clark Corp.—C. H. Sage, R. W. Lyons, J. L. Stilp; Longview Fibre Co.—R. S. Wertheimer.

Marathon Corp.—H. R. Palmquist; Mead Corp.—Sydney Ferguson, H. E. Whitaker; Minnesota and Ontario Paper Co.—Robert Faegre; Mosinee Paper Mills Co.—N. S. Stone; Northwest Paper Co.—H. T. Kendall, Jr., M. Harris; Oxford Paper Co.—W. H. Chisholm, P. H. Hovey, H. G. Schanche; Penobscot Chemical



LODDING DOCTORS

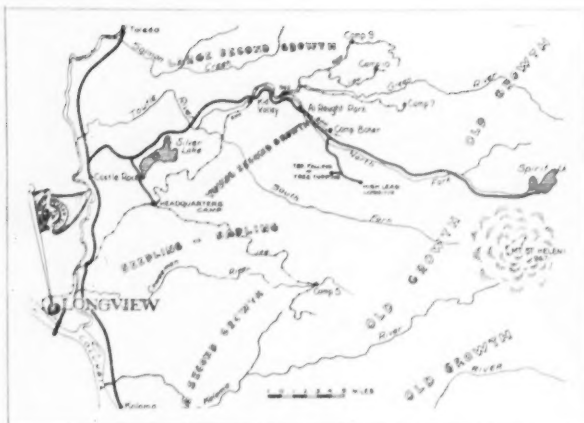


From Fourdrinier to Reel

Lodding Engineering Corporation, Worcester, Mass.

Represented by W. E. Greene Corporation,

Woolworth Building, New York.



THIS IS A MAP OF WEYERHAEUSER TIMBER CO.'S WIDELY KNOWN ST. HELENS TREE FARM. This will be a high point of the Coast Woods Tour being taken this month by top industry executives from all over the United States. The roads they will travel in buses are indicated. Also the relationship of the Tree Farm to Longview, Wash., where Weyerhaeuser's great forest products industries center is located. And to snow-capped Mt. St. Helens, which is 9,761 ft. high. Logging is mainly on the North Fork of the Toutle River. The heavy line running north and south on the left is the Pacific Highway between Seattle and Portland, Ore.

Fibre Co.—A. Hollingsworth, Jr. and A. Hollingsworth, Sr.; Port Huron Sulphite and Paper Co.—N. O. Seagrave; Potlatch Forests, Inc.—R. Cox, W. P. Davis, E. C. Rettig; Puget Sound Pulp and Timber Co.—L. Turcotte; PULP AND PAPER—Lawrence K. Smith, Albert W. Wilson.

Rayonier, Inc.—J. Sheehy; Rhinelander Paper Co.—Folke Becker, Benton Cancell; St. Regis Paper Co.—W. R. Adams, Albert Ernest, H. V. Hart; Scott Paper Co.—G. W. Pepper; Union Bag and Paper

Corp.—G. W. E. Nicholson; Waste Utilization Council—H. J. Perry; Wise, Corlett and Canfield—W. W. Corlett; Weyerhaeuser Timber Co.—L. K. Larson, H. W. Morgan, J. P. Weyerhaeuser, Jr.

U. S. Pulp Producers Assn.—J. L. Ritchie; Assn of Pulp Consumers, Inc.—R. R. Porter; Hammermill Paper Co.—D. S. Leslie; International Paper Co.—L. J. Kugelman; Riegel Paper Corp.—Walter Hamilton; N. Y. and Pennsylvania Co.—Peter S. Paine.

New Vistas for Woodpulp

Opening vistas of many new markets for dissolving woodpulp, American Viscose Corp. announces Sylvania 600 MS-3, which it claims may be the strongest cellophane yet made. Cannon Mills has been shipping sheets and bed spreads in it. With specially toughened base film and special coating to take a strong heat seal, it was developed primarily for textiles. Amvisco has contracted to use most of the woodpulp produced in the new Ketchikan, Alaska, dissolving pulp mill.

Fred Shanaman Host Honoring Cleminson

Fred C. Shanaman, president, Pennsylvania Salt Mfg. Co. of Washington, Tacoma, Wash., was host at a party in Vancouver, B.C., recently, honoring Les Cleminson, who had been appointed manager of new development for Abitibi Power & Paper Co. in Toronto. Several leading figures in British Columbia industry attended.

Mr. Cleminson went west two years ago from his post with Abitibi to manage the cellulose division of Alaska Pine & Cellulose, a new company resulting from the west coast partnership of Abitibi and Alaska Pine Co. which together purchased B.C. Pulp & Paper Co.

Executive Changes Made by Chain Belt

J. C. Merwin has been elected chairman of the board and L. B. McKnight was elected to succeed Mr. Merwin as president and chief executive officer of Chain Belt Co., Milwaukee. Mr. McKnight joined Chain Belt in 1927 as sales manager of a subsidiary, Stearns Conveyor Co.

First Half Year's Record for Paper Grades

U. S. paper production—first six months 1953—13,300,000 tons. This is 2.9 percent below 1951's similar period, but 9.6 percent above 1952's.

In paper grades alone it was only 4/10ths percent above 1952's and 4.1 percent behind 1951.

Newsprint was 4.6 behind 1951; 6.5 behind 1952.

Printing and similar papers have been most stable, just about 1½ percent above both years. Fine paper dropped nearly 10 percent under both years. Tissue was 4 percent under 1951, but 9.7 above 1952.

Paperboard was 3.3 behind 1951; 19.2 above 1952. But building boards were up 12.5 over 1951 and 22.5 over 1952.

Another Meeting Set For Gearhart, Ore.

The Coast Superintendents and Coast Tappi have decided to again hold their joint spring meeting in 1954 at Gearhart, on the Oregon ocean beach, May 20-23. It will be their fifth meeting there in eight years. This year's drew a 409 registration. Others were held in 1946, 1947 and 1948, with the latter year drawing 460.

Speedup Indicated for Scott Machines in West

A Scott Paper Co. press release dated Aug. 10 said "in about six months" (ed.—Feb.) two new high speed paper machines will be turning out finished paper products on the Coast. These are the two big Beloit tissue machines ordered for the Everett, Wash., addition alongside its Soundview Pulp Division, and previous reported dates for their start-up had been January for No. 1 and about June for No. 2.

Trends in Integration of Pulp and Paper Mills

The trends in integration in this industry present some contrasts.

In the United States, 62 percent of paper mills but only 45 percent of paperboard mills are wholly integrated.

Percentagewise, 93 percent of newsprint mills, 80 percent of machine coated mills, 75 percent of coarse paper mills, and 67 percent of containerboard and industrial paper mills are wholly integrated.

Largest partially integrated groups are sanitary, 48 percent, groundwood, 39.

But mills wholly dependent on outside pulp or raw material supply total 29 percent. Sixteen percent of all paper mills and 47 percent of all paperboard are wholly dependent on market supplies.

Percentagewise, the groups most dependent are non-bending paperboard, 94 percent, special paperboards, 70, absorbent, 59, bending board, 66, cardboard, 58, tissue, 45, and fine papers, 40 percent.

American Money And Know-How Wanted In India

American capital is sought to build another new mill in India—to be the West Coast Paper Mills Ltd., at Dandeli, Kanara district, Bombay. Using bamboo as raw material, an eventual 125 tons a day of pulp and paper products would be made.

Achyut D. Chaudhari, Bombay promoter, said—as a starter—an American investor who would contribute 10 to 15 percent of issued capital of 12,500,000 rupees (about \$2,600,000) to build a 25-ton semi-chemical pulp and paper mill and who would furnish technical aid, would be given complete management.

Eventually, 49 percent American capital would be permitted in an overall \$10,500,000 project to make another 100 tons of chemical pulp products including rayon-acetate pulp, newsprint, writing, kraft paper and duplex box.

New Suction Press For Longview Fibre's No. 6

Longview Fibre Co., Longview, Wash., is installing a 30 in. diameter heavy duty Downingtown suction press on its newest machine (No. 6) in place of the present plain press, according to R. S. Wertheimer, vice president and resident manager. Seven dryers are going in ahead of this suction press unit to take out more water "by reason of the reduction of specific viscosity of the water," he says.

It is anticipated this change will increase No. 6's production, principally container liner grades, about 15 percent.

Paper Mill for Alberta

Building Products, Ltd., which has been operating a roofing plant near Edmonton, Alta., for several years, will start construction of a felt and building paper mill immediately, according to Ralph Moore, deputy minister of economic affairs for the Alberta government.

The company acquired the necessary land some time ago, and it is understood that machinery has been ordered. Building Products at present operates felt and building paper mills at Pont Rouge and Montreal, Que. and Winnipeg, Man.

WOOD PULP PAPER

Offices and representatives in 60 cities in the United States, Europe, Latin America, Africa, and Asia



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BULKLEY, DUNTON PAPER (FAR EAST) CO., INC.
BULKLEY, DUNTON PROCESSES, INC.
In New England—CARTER, RICE & CO. CORPORATION
and STORRS & BEMENT COMPANY



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all
through the mill

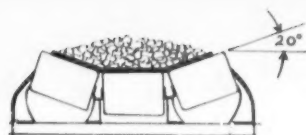


helps you handle it...

economically

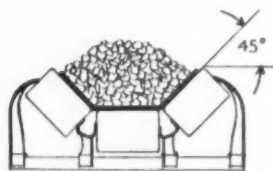
for example:

WOOD CHIP HANDLING



Standard Troughed Belt Idler

Note the much greater capacity made possible by the 45° angle of concentrating rolls on Rex Wood Chip Idler.



Rex Wood Chip Idler

All the way from pulp wood to paper, Rex can help you cut your handling costs. Take the Rex Wood Chip Belt Conveyor, for example. Rex Wood Chip Idlers are specially designed to meet the needs of the pulp and paper industry. The 45° slope of the concentrating rolls permits the loading of chips very close to the belt edge and piling them higher on the belt without danger of spillage. The capacity of the belt is thus greatly increased, and the cost per ton of chips handled is correspondingly reduced.

Rex Wood Chip Idlers are of the same high quality as standard Rex Idlers. You get the same long life, the same freedom from costly breakdowns, the same low maintenance costs.

You'll find it well worth while to ask your Rex man to review your entire wood chip handling setup. He's familiar with your problems, and he's an expert in chains, conveyors, idlers and elevators. Chances are he can help you cut costs, increase efficiency and get extra capacity, not only in your wood chip handling, but all through the mill.

Call your nearest Chain Belt branch office or write to Chain Belt Company, 4691 W. Greenfield Avenue, Milwaukee 1, Wisconsin.



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EVADALE EQUIPMENT

EAST TEXAS DIRECTORS IN VANCOUVER, B.C.

ULTRA-MODERN FEATURES of the 300-ton \$25,000,000 mill now being built by East Texas Pulp & Paper Co., in Evadale, Texas will make it an operation to be watched with interest throughout the pulp and paper world.

First details of the design and equipment for this mill, which is to start up in late 1954, were given to PULP & PAPER through cooperation of R. M. (Mike) Buckley, executive vice president and general manager, by Howard A. Simons, whose firm in Vancouver, B.C., was engaged as consulting engineers, and George Fletcher, of the Simons organization, who is project manager for the new mill.

Mr. Buckley stressed that chlorine dioxide bleached kraft market pulp will be made from the beginning, with first deliveries to customers by Jan. 1, 1955. He said the mill already has had "encouraging results" in contracting for the sale of this high brightness pulp under long term commitments.

With the Solvay process, sodium chlorate in acid solution is reduced to chlorine dioxide by methanol. Equipment is designed by Improved Machinery, Inc. Safety of process, quality of product and cost advantages are said to be features of the Solvay process, which is supplied by Solvay Sales Division, Allied Chemical & Dye Corp.

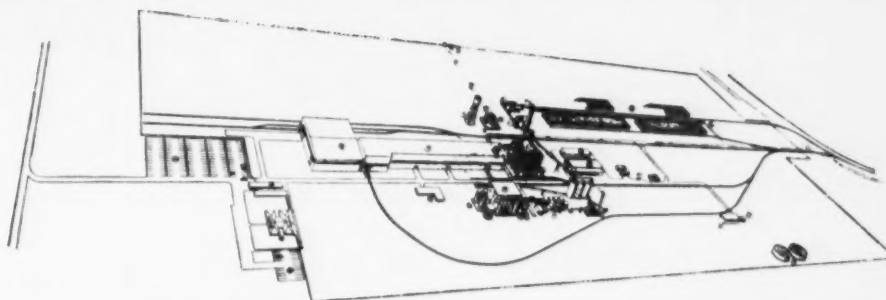
Another feature of this mill will be the versatility of the Beloit 216 inch (196 in. trim) Fourdrinier machine. When pulp is produced, production will be passed down through a slot in the machine room floor to a lower level where sheets will be handled by a 210-in. Lamb-Grays Harbor cutter and layboy and a Washington Iron Works 800 ton hydraulic press.

If and when the market warrants production of sanitary board, milk bottle cap or other similar container industry products, special apparatus will roll the product up over the calenders and to a point where it is fed to a 110 in. Moore & White Simplex cutter and layboy, with Seybold cutter for reaming.

The machine will have the Beloit air-cushioned inlet and also its new differential drive, featured by low-to-floor line shaft and compact separate gear units at each section, using Link-Belt P.I.V. units (for first description and picture of this differential drive for an entire machine see Lee Paper Co. story, PULP & PAPER Feb. 1952 issue, page 34, and article in same issue by George Wadleigh, page 40). General Electric is providing the turbo-gear unit for the machine drive. The Texas machine will have speed range from 500 to 1,500 fpm on board or paper. But when running pulp, machine speed may be as low as 100 fpm.

Vancouver Meeting

A meeting of the company's executive board with members of the Simons group,



GENERAL LAYOUT OF EVADALE, TEX., MILL of East Texas Pulp & Paper Co. is shown here. At far left are employees' parking lot and office buildings. Warehouse and machine room occupy large structures at left center. Recovery building, turbine, boiler house and evaporators are clustered around concrete stack shown in center, with drum barkers, chipper and screen buildings back of stack and log

dump extending to right back. Large square-shaped building in center foreground is screen room and bleach plant, with recausticizing facilities to right extending towards chip silos in front of which is filter building. Back of silos are equipment warehouse, repair shop and stores. Off to the right is pump house and in right corner are two circular reservoirs.

GEORGE FLETCHER, Project Mgr. for East Texas Mill for Howard Simons Engineering firm. With Mr. Simons 7 years, he now divides time between Vancouver, B.C., and Evadale.



A. G. "Buff" Natwick, resident manager of the new company, and others was held recently in Vancouver under chairmanship of Richard A. McDonald, when several engineering features of the overall program were finalized.

Pulpwood for the Evadale mill, whose planned capacity has been recently boosted from 250 to 300 tons daily, will be from second growth pine stands that grow with amazing rapidity in that section of the Southwest. Evadale is about 30 miles from Beaumont, near the Neches river. Operating base of Kirby Lumber Co. is nearby, and with control over more than half a million acres of forest, it has been one of the major factors in wood utilization in that region.

Most wood going to the new mill will have a diameter of 10 inches or less and it will be delivered by rail or truck and stacked in storage piles adjacent to the plant. As required, the wood in 6-foot lengths will be flumed to the steel jack-ladder feeding the woodroom. For handling pulpwood at storage piles two 2½ yard Lorain Thew Shovel Co. cranes will be operated.

Equipment Selected

Debarking will be done by mechanical barking drums to be supplied by Fibre Making Processes, and the chipper selected is a 102-inch unit built by D. J. Murray Mfg. Co. Rotex screens are by

Orville-Simpson, and Carthage Machine Co. will provide the re-chipper.

E. D. Jones & Sons Co. is supplying jordan and beaters. The paper machine hood and air systems will be by J. O. Ross Engineering Corp.

Jonsson knotters have been ordered from the Bird Machine Co., and the brown stock and bleach washers as well as deckers and flat screens are being ordered from Improved Machinery, Inc.

Recausticizing will be accomplished by the Dorr system. Traylor Engineering Co. will furnish the lime kiln, and the lime mud filters will be the work of Oliver United Filters.

Combustion Engineering, Inc. has been called on to install the recovery unit which will have a capacity of 900,000 pounds of dry solids per 24 hours. At this capacity the unit will produce 130,000 pounds of steam per hour at 625 psi and 750° F.

A power boiler will be a Babcock & Wilcox unit, 725 psi, producing 230,000 pounds of steam per hour. A 200-foot concrete stack for the recovery building and auxiliary plant is to be built by Custodis Construction Co. Cochrane is supplying boiler water treatment.

Sextuple effect black liquor evaporators will be put in by Goslin-Birmingham, and the precipitating equipment by Koppers Co.

Feeders for the chip storage building will be by Link-Belt Co., which also is building the machine room Lowerator.

Chicago Bridge & Iron Co. will build the digesters with Electric Steel Foundry circulating systems. Blow-off valves are being installed by Yarnall-Waring. Chicago Bridge is supplying a 125,000 gal. water tank for fire sprinkler systems. The mill will have eight 2,000 gal. wells for process water.

Buildings generally will be of reinforced concrete and steel. Some buildings will have asbestos siding.

Mr. Buckley, formerly vice president

PULP & PAPER Photo of President Decker and Other East Texas Officials



THIS UNUSUAL PICTURE of top figures of new EAST TEXAS PULP & PAPER CO., including HAROLD DECKER—second from left—who is President of the new enterprise, was taken exclusively by PULP & PAPER in Vancouver, B. C. Mr. Decker is also President of Houston Oil Co. of Texas, which owns 650,000 forested acres and is principal owner of the new company, along with Time, Inc. In this picture—left to right:

HOWARD SIMONS, whose engineering firm is designing the new \$25,000,000 mill at Evadale, Tex.; MR. DECKER;

RICHARD A. McDONALD, of Oakland, Calif., Director and Chairman of the Executive Committee (also a Director and former Exec. V.P. of Crown Zellerbach);

CHARLES L. STILLMAN, Vice Pres. and Director of East Texas (also Exec. V.P. of Time, Inc.);

R. M. (MIKE) BUCKLEY, Executive Vice Pres. and Gen. Mgr. of East Texas, who recently moved to Evadale from Houston (former V.P. and Sales Mgr. of Soundview Pulp Co.);

ARTEMUS L. GATES, Director of East Texas (also a Director of Houston Oil and Time, Inc.).

Four East Texas Directors were not present (Houston Oil's Foster Parker, A. G. McNeese and Gurdon Wattles, and Time's Dave Brumbaugh).

This is first time Mr. Decker and some other top figures in this new enterprise were available for a picture. Some of these men flew into Vancouver for just a few hours in order to confer with Mr. Simons, who engineered the similar type MacMillan & Bloedel "Harmac" chlorine dioxide bleached kraft mill in British Columbia.

and sales manager of Soundview Pulp Co. of Everett, Wash., has been maintaining head office of East Texas Pulp & Paper Co. in Houston at the Abstract & Title Building until such time as offices have been completed at Evadale. Clyde Cole is controller for the company.

A. G. "Buff" Natwick, the resident manager, has been commuting lately between Texas and Vancouver and the East, but he will soon be able to settle down at his new base in Evadale, where John Hartman is already established as resident engineer for the company.

Practically the entire Howard Simons organization has been concentrating on the Texas project for the past few months, with Project Manager Fletcher spending much of his time at the mill site, where the consulting engineers are represented by Frank Alexander, senior engineer, and other staff members.

James Keith, vice president of Tellepsen Construction Co., has been giving the Evadale mill much of his personal attention, with Emil Ruska representing his organization as project manager. By next year there will be 600 men on the job.

One of the undertakings separate from but connected with the pulp mill is a 13-

mile effluent disposal canal which is being built simultaneously to mill construction.

The Evadale mill will not lack for pulpwood, as the stands of timber accessible to it cover more than 650,000 acres.

Circumstances which led to this mill had their origin half a century ago when Kirby Lumber Co. and Houston Oil Co. were organized to develop lumber and petroleum resources. That was long before anyone seriously thought about producing pulp. Southwestern Settlement & Development Co. was formed with a view to colonizing the area cleared of forest. But subsequent experience demonstrated that new pine trees came in faster than new farmers.

Decker is One of New Presidents in This Industry



HAROLD DECKER, President of Houston Oil Co. of Texas and also President of East Texas Pulp & Paper Co., Evadale, Texas.

OFFICIAL ROSTER FOR EAST TEXAS PULP & PAPER

Here is a revised up-to-date list of East Texas Pulp & Paper Co. officials and key executives:

Harold Decker, president and director. He is also president and director of Houston Oil Co. of Texas, Houston, Tex.

Richard A. MacDonald, of Oakland, Calif., chairman of executive committee and director. He is also a director of Crown Zellerbach Corp.

R. M. (Mike) Buckley, executive vice president and general manager, who has moved to Evadale, Tex., offices from Houston. He was from Everett, Wash., where he was long a vice president of Soundview Pulp.

Charles L. Stillman (exec. v. p. of Time, Inc.), vice president and director.

Foster Parker (Houston Oil), secretary, treasurer and director.

A. G. McNeese (Houston Oil), Artemus L. Gates (Time), Gurdon Wattles (Webster Tobacco president and Houston Oil) and Dave Brumbaugh (Time v. p.), all directors.

Clyde E. Cole, assistant secretary and assistant treasurer.

Albert G. Natwick, resident manager.

Clark H. Morian Jr., general sales manager.

John Hartman, assistant manager and chief engineer.

E. R. Collins, traffic manager.

One of the newest presidents in this industry is Harold Decker, president of East Texas Pulp & Paper and of Houston Oil Co. of Texas. His offices are in the Petroleum Bldg., Houston.

Mr. Decker received his college education at Kenyon College at Gambier, Ohio, and at the University of Oklahoma. In the spring of 1949 he attended the Advanced Management Program of the Harvard University Graduate School of Business Administration in Boston.

Mr. Decker was at one time associated with Skelly Oil Co. and later with Seaboard Oil Co. Still later he was with Pan American Production Co. as vice president and general manager. On Jan. 1, 1950, he resigned his position with Pan American to accept the presidency of Houston Oil Co. of Texas and its subsidiary companies, which position he now holds. He was elected president of the East Texas Pulp and Paper Co. upon its organization in December, 1952.

Mr. Decker is a director of Halliburton Oil Well Cementing Co., Duncan, Okla., and of the Texas National Bank, Houston.

For years he has been active in the various oil industry organizations. He is a member of the American Petroleum Institute and a director of the Texas Mid-Continent Oil & Gas Association and the Independent Petroleum Association of America, and a past director of the American Institute of Mining and Metallurgical Engineers.

Water Economy with EMERSON SHOWER PIPES

With the Emerson Shower Pipe you can re-use processed water containing solids, thereby cutting water costs with proper cleaning action. The Emerson is equally adaptable for use with fresh water assuring maximum cleaning with minimum water consumption.

Here are the exclusive features
of the Emerson Shower Pipe:

BRUSH
IN CLOSED
POSITION

SHOWER PIPE

CENTRALIZER

An ingenious mechanical nozzle cleaning device (individual stainless steel replaceable brushes) which automatically keeps openings free of foreign matter.

When brushes are in the openings of the nozzles an internal flush valve synchronized with the movement of the brushes opens to flush out the pipe from end to end. When the brushes pass the openings the valve closes.



Replaceable nozzles
of stainless steel, ni-
tralloy or carbide to
meet all conditions.

CLEAN OUT
WIRE BRUSH
NOZZLE

Custom-made for specific mill uses in pipe sizes of 1½", 2", 2½", 3" and 4". The Emerson Shower Pipe is recommended for use on Fourdrinier wires, felts, cylinder molds, rotary screens, thickeners, washers, grinding stones, wet machines, for foam killing and humidifying, and for special applications.



Call or write for further information about Emerson Shower Pipes.

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Division of John W. BOLTON & Sons, Inc.
Lawrence, Massachusetts, U. S. A.

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It's Bristol's new METAGRAPHIC Pneumatic

for measuring, indicating, recording and controlling pressure, temperature, vacuum, flow, differential pressure, and liquid level

Here are a few of the advantages of Bristol's METAGRAPHIC system:

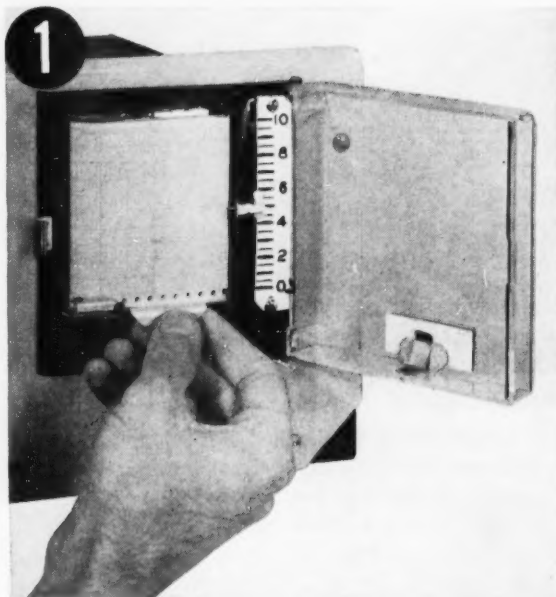
SIMPLICITY... fewer moving parts, fewer adjustments needed, and less service required. Range changes can be made in seconds.

FLEXIBILITY... all components are interchangeable. Units can be combined like building blocks to make up any kind of arrangement; functions can be located exactly where they're needed.

TRUE PLUG-IN SERVICE... provides great savings in installation costs. And if trouble is suspected with any component, just pull the doubtful unit out and plug in a stand-by—without stopping any processing. The suspected unit can be taken to the shop and checked whenever time permits. You don't lose any air pressure when changing units, either. Bristol's automatic sealing system prevents loss of signal to other components.

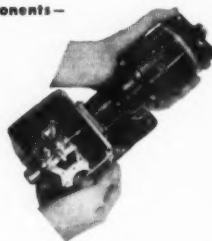
NO TIME LAGS... in a four-pipe circuit the transmitter signal and the controller-output signal travel around a very short loop—which can be as little as three feet long.

These are some of the important advantages of Bristol's METAGRAPHIC instrument system—the product of over 60 years of experience in instrument making and application in practically every industry. Get the whole story by writing to The Bristol Company, 142 Bristol Road, Waterbury 20, Conn.



IT TAKES ONLY SECONDS to change the Bristol METAGRAPHIC receiver from a recorder to an indicator: Case door is opened...

Here are the basic components—

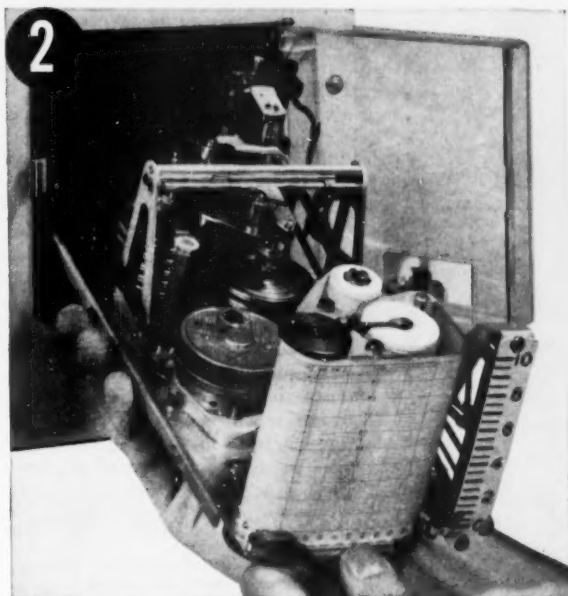


BRISTOL PNEUMATIC TRANSMITTER, with cover removed to show simplicity of the world-famous Bristol measuring element. The frictionless transmitter, with only one pivot and no flexures, will operate in any position, indoors or out. The unit is sensitive to extremely small changes in the measured quantity, as minute as 0.03% of range, including reversal.

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

INSTRUMENT SYSTEM!

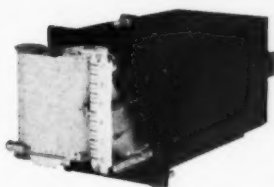
Transmission instrument system . . .



Recorder chassis withdrawn from case (air pressure is automatically maintained) . . .



Indicator chassis is plugged into same case. Control remains undisturbed throughout change-over.



HERE'S THE RECORDER CHASSIS, in retracted position. Now pen can be inked, set point and zero adjustment made without disturbing record or control. You can bring up to three related variables, such as flow, pressure and temperature, into one receiver. Auto-manual switching is foolproof and "bumpless," without disturbing valve position.



THE BRISTOL CONTROLLER can be plugged into back of receiver, placed at process, or used as a "blind controller." Available in on-off, proportional, proportional plus reset, proportional plus derivative, and proportional plus reset plus derivative. Experienced instrument men will recognize this as a unit service-proved by thousands of installations.*

*Licensed under C. B. Moore patents

BRISTOL

LOOK FOR OUTSTANDING NEW
DEVELOPMENTS FROM BRISTOL

THE DEPENDABLE GUIDEPOST OF INDUSTRY

COMPLETE REPORT ON NEWEST COMPLETE MILL IN SOUTH

ST. REGIS "JAX" MILL

ENGINEERING FEATURES DISCUSSED IN EXCLUSIVE STORY

THERE ARE MANY FEATURES, in addition to its capacity and the fact that it is the latest complete new mill to begin operations in the South, to distinguish the new kraft pulp, paper and board mill of St. Regis Paper Co. at Jacksonville, Fla. The 100,000-ton mill with its 230 in. Beloit Four-driner machine is on a 200-acre site along the St. John's River on the outskirts of Jacksonville. It incorporates new ideas in equipment, processes and design that merit detailed attention.

Following interviews with engineers and designers and several visits by editors in the past two years, inspecting installations and talking with the men who run it, PULP & PAPER reports on these features:

1. Architecture and design—For present and future.
2. Nuisance elimination—Effluent and air pollution control.
3. Paved woodyard and flume system.
4. Labor saving devices throughout operation.
5. Instrumentation.
6. New type suspension bark boiler.
7. Miscellaneous machines and other features.

ROY K. FERGUSON (left), President of St. Regis Paper Co., and ED R. GAY (right), Executive Vice President, St. Regis Paper Co.



Facts About St. Regis—

St. Regis Jacksonville tract	1,400 acres
Mill site, included in tract	200 acres
Overall length of mill	1,750 ft.
Length of paper mill unit	900 ft.
Pulp-paper capacity per day	300 tons
Total potential capacity with expansion	1,000 tons
Paper machine: length	457 ft.
" speed (design)	2,500 fpm.
" wire width	230 in.
" trim	210 in.
Wood consumption per day	525 cords
Steam generating capacity per hr.	430,000 lbs.
Combined capacity with Pensacola (per yr.)	365,000 tons
Total St. Regis kraft capacity (per yr.)	560,000 tons

Architecture and Design

The Jacksonville mill of St. Regis is an embodiment for the pulp and paper industry of the straight-line-production idea. The wood, literally, comes in at one end and in a straight flow comes out at the other as finished paper or board. The only possible argument to this statement would be that there is a side-flow from barking drums and chippers to chip silos. But with this one exception, there is a straight-line flow right from pulpwood storage to the finished paper storage room.

The auxiliaries to the process, including liquor making, precipitators, recovery, bark burner and power plant, are lined up in this order on one side of the plant, while on the other is the water treatment plant and the cafeteria and administration buildings. Only from the air can one gain full appreciation for the design of this layout. It is approximately one-third of a mile from the woodpile to the end of the machine room, and from the air it is possible to see how spacing has been planned on the ample 1400-acre mill site to provide for further expansion, and to preserve the straight production flow.

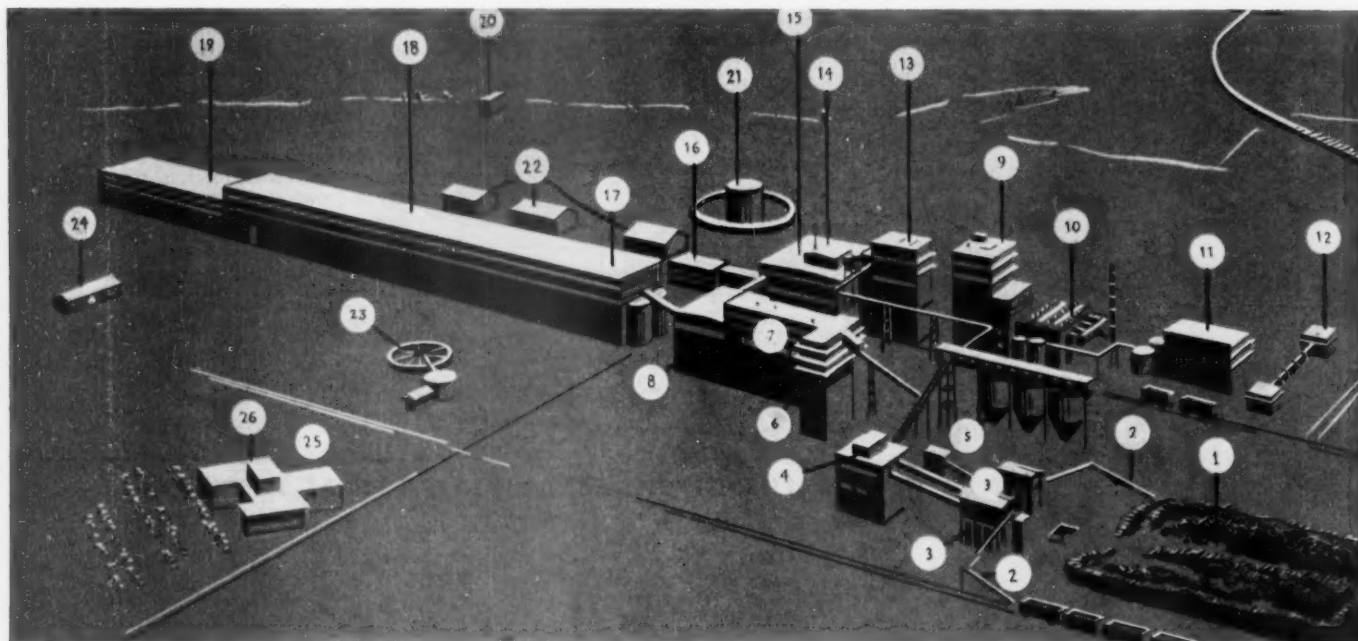
DRAWING SHOWING ALL MAJOR COMPONENTS OF ST. REGIS MILL AT JACKSONVILLE

Numbers identify the different units and processes in the new pulp and paper mill of St. Regis Paper Co., at Jacksonville, Florida. These identifications and this drawing may also be used to identify the different units and structures shown in our cover picture for this issue. Here follows the identifications, according to numbers shown in this drawing:

1. Wood storage yard
2. Pulpwood flumes
3. Barking drums
4. Chipper plant

5. Chip storage silos
6. Digester building
7. Pulp washing room
8. Pulp screening room
9. Black liquor evaporators and recovery furnace
10. Electrostatic precipitators
11. Causticizing plant
12. Lime kiln
13. Bark burning boiler
14. Oil burning boiler
15. Turbo-generator room

16. Mill office and laboratory
17. Stock preparation department
18. Paper machine room
19. Paper finishing and shipping department
20. Condenser water intake and pump house
21. Fuel oil storage tank
22. Mill stores and repair shops
23. Mill water softening plant
24. Roll and knife grinding building
25. Cafeteria
26. Personnel facilities building



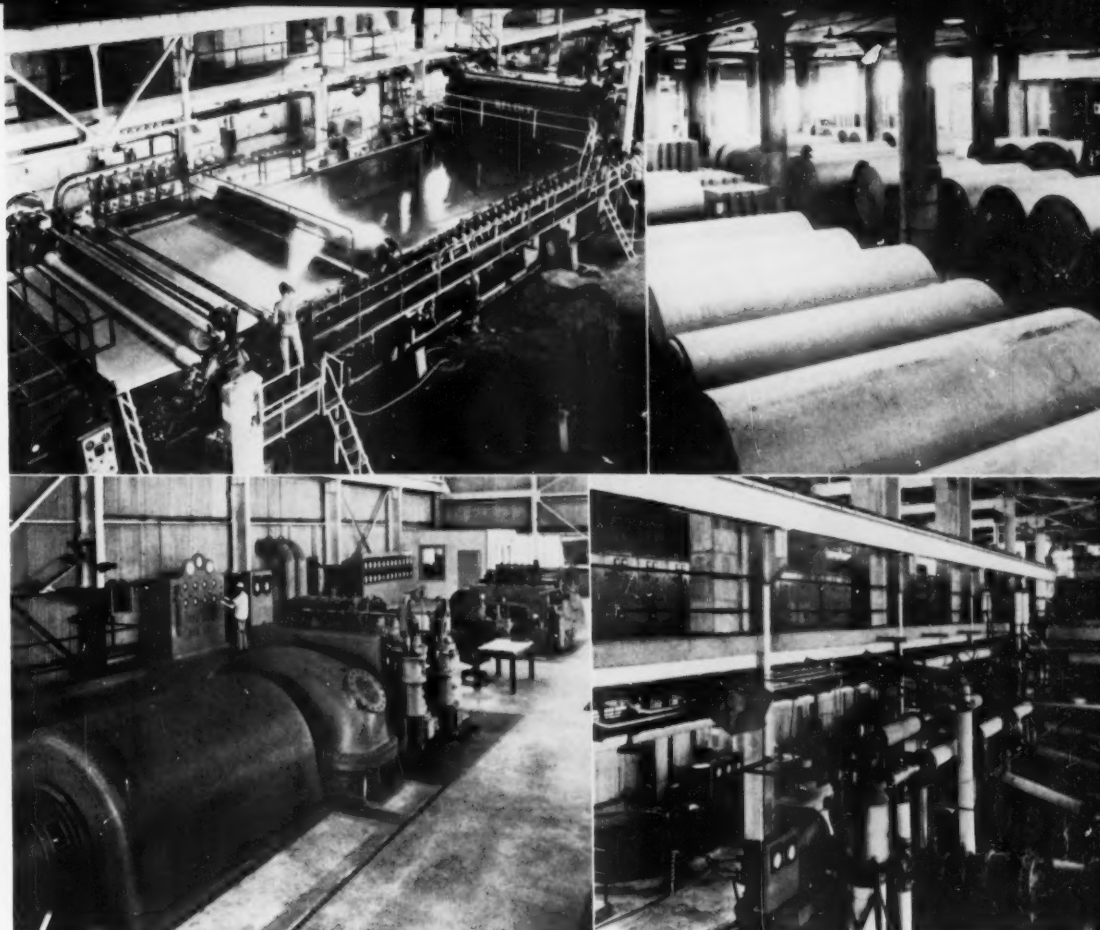
RECENT PICTURES TAKEN AT ST. REGIS MILL IN JACKSONVILLE

UPPER LEFT: LOOKING DOWN on Fourdrinier section of 230 in. Beloit machine, at Jacksonville Mill of St. Regis Paper Co. At right is pressure vacuum Beloit headbox with adjustable slice. A vacuum pick up off wire is to be installed enabling speeds on lightweight paper of close to 1,500 or more fpm.

UPPER RIGHT: ROLLS OF KRAFT paper from Jacksonville Mill are shown in roomy concrete and steel ship storage room. Note open construction with pillar supports. Stevenson & Rubens, consulting engineers of Seattle, designed this section and machine room.

LOWER LEFT: The 50 by 120 ft. Turbine Room at Jacksonville Mill of St. Regis Paper Co., housing two 6,000 kw 4,160 volt General Electric turbo-generators and electric feeder distribution switch gear.

LOWER RIGHT: FOUR EMERSON MFG. CO. jordsans driven by General Electric 400 hp synchronous motors. Johns Manville Transite piping is used. Two Noble & Wood Victory Beaters are beyond. On back of mezzanine is Oliver United saveall.



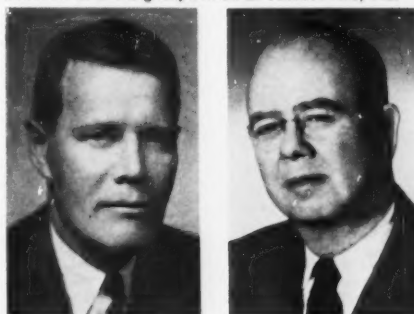
From the ground it is possible to see better the graceful, functional lines of the buildings themselves. The digester, boiler plant, bark burning and recovery buildings all have louvered work floors with a metal overhang as part of the integral design of the building to protect against the sun. It is a design that is pleasing to the eye, and strictly functional as adapted to provide top working conditions in the Southern climate.

Functional, too, is the special design of the digester building. The building is set on steel framework and is open from the ground to the first floor—which is at a level with the top of the digesters. This means the whole lower sections of the digesters are exposed, and it is expected that as a result of this accessibility a digester could be removed and replaced over a weekend.

Interesting detail of construction and design is in the liquor making area where the three causticizing tanks are set on 4-foot-high concrete ribs which hold them above ground level and help keep out dampness and prevent corrosion. The causticizer tanks are 11 feet in diameter and 10 feet high. The outer shell is steel, while the linings, which were fabricated to the tanks right on the job, are of 10-gage type 304 stainless steel, rolled to the radius and flanged over 1½ in. at the top. These linings came for fabrication in 36-in. widths. The bottom of each tank is a 1-in. white iron wearing plate set in a special mixture of marble dust, gravel and cement. These linings were first tested at the St. Regis mill at Pensacola.

There is a provision in design for all major buildings to allow for future expansion, to at least triple present capacity. The present woodyard already will handle all necessary extra capacity. But there is room, for example, for additional lime

WILLIAM R. ADAMS (left), Vice Pres. in charge of Manufacturing, and JUSTIN H. McCARTHY (right), Chief Engineer of all operations, were two top officials of St. Regis Paper Co. who had most to do with overall planning, layout, design and construction of the big expansion at Jacksonville, Fla.



Background on New Mill

THE SITE ON WHICH the new Jacksonville, Fla., mill of St. Regis Paper Co. has been built is part of an original land grant made by the King of Spain in 1816 to John Broward. The grant was made because of Broward's avowed intention "to establish a mill to saw lumber for the supply of commerce and the province," and it is one of the few Spanish grant titles to be upheld by the U. S. Supreme Court. Previous to St. Regis acquisition, the land was used as a sawmill site by Carpenter-O'Brien Co. and later, Brooks-Scanlon Co. So it is well identified with forest products.

According to Roy K. Ferguson, St. Regis president, the Jacksonville site was chosen because of:

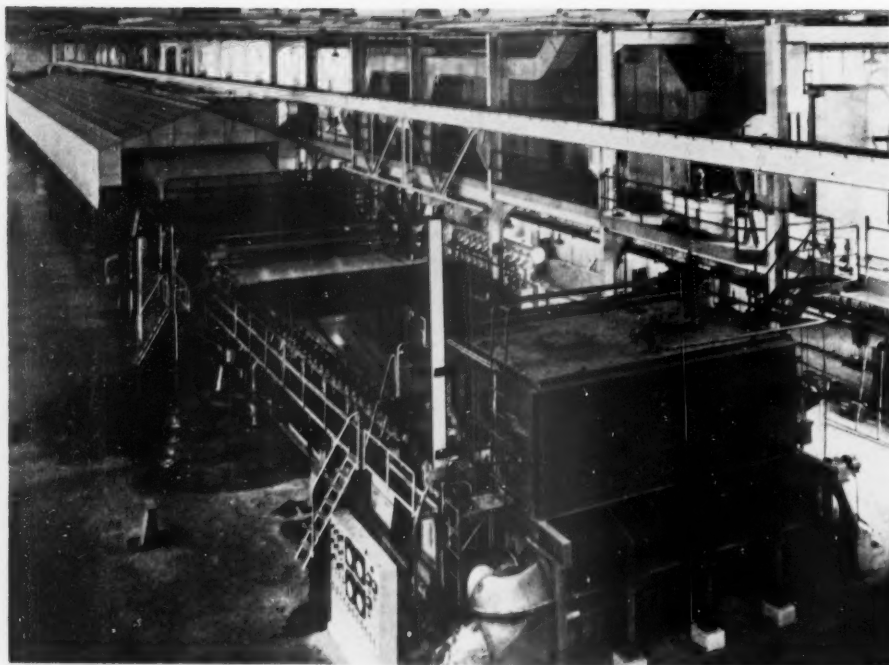
- (1) Proximity to large pulpwood supplies;
- (2) Favorable transportation by rail, water and highway;
- (3) Ample labor supply;
- (4) Plentiful supply of pure water;
- (5) Facilities for proper disposition of mill effluent and waste;
- (6) Fair tax rates—important inducement to industry;
- (7) Favorable attitude of local citizens, municipal, county and state authorities, and
- (8) Community facilities for business, education, religious worship and recreation.

kilns; eight additional digesters; the screen room and washer room can be tripled; there is room to add a bleach plant if necessary; and the machine room can be extended to add another machine. There is even the detail of room allowed in the pipe bridges for additional pipe lines to handle new capacity. As a matter of fact, the design layout is predicated on a 1,000-ton mill, of which the present 300-ton plant can be said to be the first unit.

The beater room, machine room and the finishing room were designed by Stevenson and Rubens, consulting engineers, Seattle, Wash., who were able to coordinate their efforts, even though more than 3,000 miles away, with those of Justin H. McCarthy, chief engineer for St. Regis, and his staff, who directly supervised all design and engineering. Alvin H. Johnson & Co., New York City, engineered the pulp mill, and was responsible for power plant and all electrical design work.

The beater room and machine room are supported on piling, whereas the finishing room, where minor settlements should not be detrimental, is supported on spread footings on sand. The entire structure from the foundation to the beater room, machine room and finishing room floor level is made of reinforced concrete. This resulted in overall job economy, provided additional mass under the paper machine, which is an important factor in a high speed machine installation, conserved structural steel which was a critical factor at the time construction began, and made it possible to get underway without waiting for the structural steel to be erected.

The structure above the work floor, which consists of the roof structure and a mezzanine floor, on which the ventilating equipment was installed, is framed in structural steel. The roof is built of pre-cast concrete slabs and insulated with a



2-in. thickness of cellular glass insulation. Corrugated asbestos board was used for siding with a liberal amount of corrugated glass for admission of daylight.

In order to save water, an underground system of trenches were installed. Into these trenches discharge all vacuum pumps and cooling water from compressors, aftercoolers, etc. There the water is separated from the air, the water is pumped for use in the process and the air is exhausted outside the building through an underground trench.

Of design interest is the location of the starch system in the basement of the machine building adjacent to the center of the machine. In this station are two 6,000-gal. tile-lined tanks for storage and one 3,000-gal. cooking tank. From this central location copper piping leads to the wet end, size press and the calenders, so that internal or surface treatment can be applied from the one control point.

Architect for the three service build-

ings was Celli-Flynn, McKeesport, Pa. The administration building, the cafeteria, and the mill office and laboratory building are all of the same construction, which is concrete frame. Walls are faced with 4 in. of brick, insulated with 2 in. of foamed Fiberglas, and backed up with 4 in. of tile. The roofs are of poured concrete, also with foamed glass insulation. All three buildings are air-conditioned, and have panel heating in the floors.

A variety of supplies for the mill were from Holley-Edwards Sales, Inc., of Jacksonville.

Nuisance Elimination

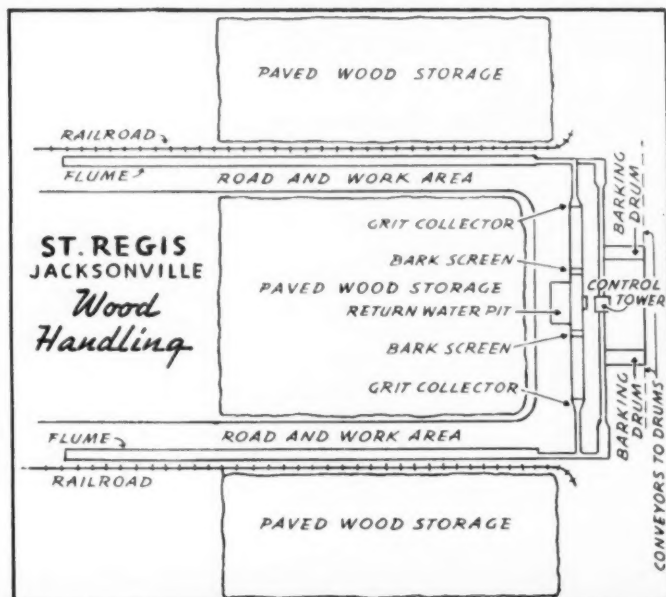
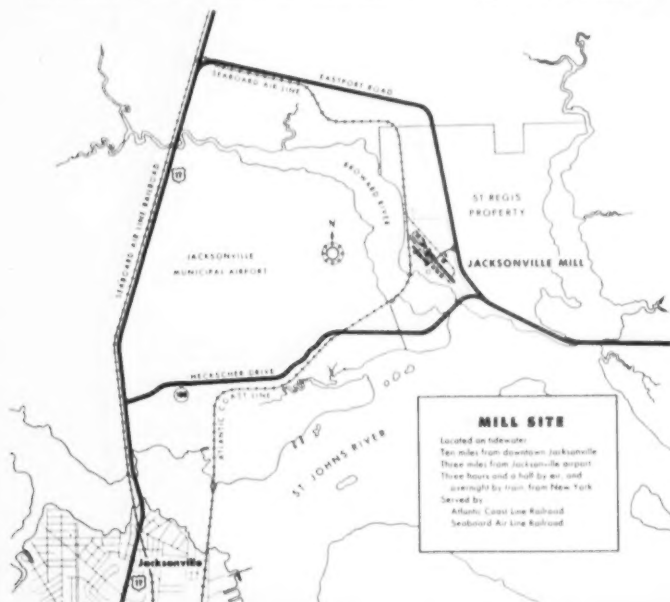
This industry is familiar with the problems created by locating a large chemical operation near a city or resort area. The St. Regis plant is located near both and also within sight of the main airport serving the area. So in addition to expenditures to minimize air and water pollution (which amounted to close to \$1,000,000), the company had to locate its water tower and limit height of all stacks according to CAA specifications.

Features controlling air pollution include a mechanical cinder catcher to capture cinders from stack gases of the bark-burning boiler; mechanical fine dust collector to remove lime dust from the rotary kiln gases; and electrostatic precipitators for the flue gases from the recovery furnace. The two Koppers precipitators comprise the largest such installation in this country. Each precipitator is capable of handling the total flue gas volume, which is estimated to be 132,500 cfm at 400 tons per day pulp production. In actual tests it was found they would handle flue gases at an equivalent rate of 140,000 cfm with an efficiency of 98.9%. The precipitators are protected electrically by a key interlock system so that no one can enter the equipment unless it is shut down.

Effluent Control: The mill is located on the St. John's River, which is popular for fishing, and not far from a number of private and public beaches. To protect these interests, St. Regis spent \$350,000 for an outfall sewer line, almost a mile and a



JOHN K. FERGUSON (left), Resident Manager of new Jacksonville operations of St. Regis. JOHN A. McDERMOTT (right), General Supt., Jacksonville, who had important role in planning paper machine design and installation.



New St. Regis Mill at Jacksonville ...



... all steam by C-E

Located on a two hundred acre site on the outskirts of Jacksonville, Florida, this new kraft pulp, paper and board mill represents an important step in the long-range expansion program of the St. Regis Paper Company. Outstanding in many respects, this mill contains nearly a million dollars worth of equipment installed specifically to eliminate or materially reduce the problems of waste disposal.

All steam generating equipment for this new mill was supplied by Combustion Engineering. It comprises: (1) a Chemical Recovery Unit designed to burn 900,000 pounds of black liquor dry solids per 24 hours; (2) a Power Boiler (VU-50 type) to burn oil or natural gas and designed to supply 160,000 lb of steam per hr; (3) a Bark Burning Boiler equipped with high set spreader distributors and continuous discharge grate to produce 135,000 lb of steam per hr. All the steam generating equipment is designed to operate at 625 psi and 750 F.

The choice of C-E equipment for this outstanding new mill is well justified, we believe, by the consistently fine performance record of similar C-E units in major pulp and paper mills throughout the country.



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Combustion Engineering Building
200 Madison Avenue, New York 16, N. Y.

B 657

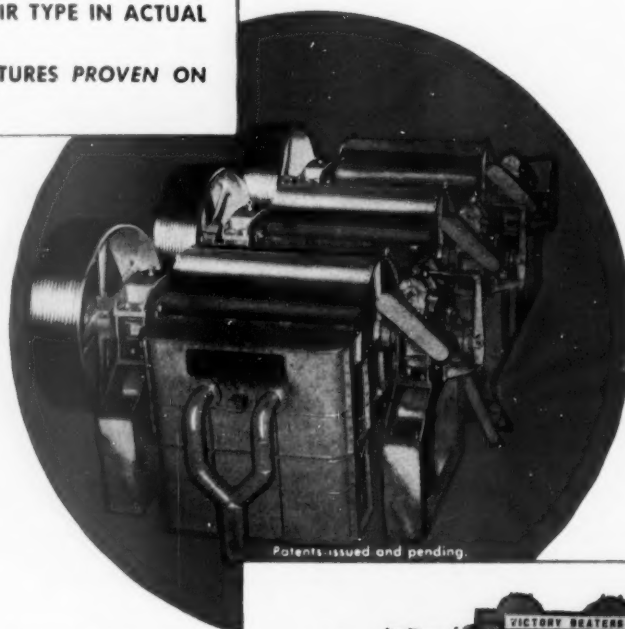
PRODUCTS FOR THE PAPER INDUSTRY INCLUDE
RECOVERY UNITS, STEAM GENERATING, FUEL BURNING
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- THE ONLY BEATERS OF THEIR TYPE IN ACTUAL OPERATION!
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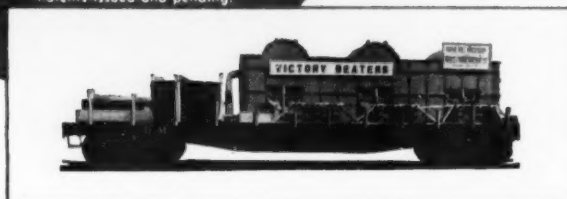
In 1946, The Noble & Wood Machine Company announced the first and only radical, major change in beater design and construction in 336 years.

In 1946 the first Single Roll Controlled Flow Victory Beater was delivered to a New England fine paper mill. It is still hard at work, 100% efficient . . . the first of many Victory Beaters that earned their welcome in the industry.

In 1949, a Multi-Roll Controlled Flow Victory Beater roared into action in a Florida Kraft mill. Today, after more than 26,000 hours of continuous operation (over 3 solid years, day and night without a shutdown for mechanical difficulties!) this powerful triplex unit is still operating as efficiently as the day it started. Impressive proof? The mill thought so and installed 2 more Victory Beater triplex units.

In other mills in various parts of the world, Noble & Wood Victory Beaters — the first and only beaters of their type in actual operation — tested and proven since 1946 — are on the job.

Remember, there is no substitute for proven performance. We respectfully invite your inquiries and will supply you with immediate information. You can appraise for yourself, on the basis of actual record, the potential value of the Victory Beater in your papermaking operation.



ONLY PERFORMANCE ON THE JOB CAN PROVE A BEATER!

PROVEN! Highest effective, predictable refining capacity. Roll has greatest possible number of bars. Stock spread in even film across full face of roll in continuous flow; untreated stock cannot pass through. Single Roll treats batches as small as 500 pounds, Multi-Roll as much as 200 tons or more per day — 1000 gallons per minute if desired.

PROVEN! Pressurized bedplates exert hydraulically-controlled upward pressures up to 40 tons, an impossibility in any other beaters!

PROVEN! Flexibility of design and completely automatic controls allow "tailored to your plant" installation. Can be made in stainless steel. Many types of stock chests in use on other floors, above or below Victory Beaters. Motors can be mounted at top to conserve floor space if desired. Shipped complete on flatcars, ready to install.

PROVEN! Costs less to operate on equivalent stock than any other beater ever installed in any paper mill in the world . . . reflecting the experience of a half century of pioneering in the manufacture of paper mill machinery.

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POWER AND CHEMICAL AREAS

(Top, left) ARCHITECTURAL DESIGN FEATURES of new St. Regis plant are shown in this photo of the recovery and power plant buildings, both housing Combustion Engineering boilers. Note open ventilation to the working floors with overhang "awnings" as part of the building structure to keep out the sun. The two Koppers Co. electrostatic precipitators are said to be the largest such units installed in the U.S. During early tests each precipitator was found to operate at a capacity of 140,000 cfm.

(Top, right) PART OF THE DUMP TANK SYSTEM to prevent waste of materials and pollution of effluent is shown at right. This tank is for emergency use and is large enough to take over all materials from the causticizing area. Tanks shown here and all of those in the extremely corrosive areas are protected by Earl Paint Corp.'s "Erkote" insulating mastic. Dorr Co. system is used for liquor making.

(Bottom, left) INFILCO MILL WATER TREATMENT PLANT as seen from machine room roof at Jacksonville. Inflico system will treat 8,000,000 gal. of water per day. Accelerator and Fuller lime handling system is just behind the treatment plant; just over the pulpwood cars is the personnel building and cafeteria; in center background is administration.

(Bottom, right) IMPORTANT POSITION IN LABOR SAVING FEATURES at St. Regis' new mill is held by the Fuller "Airveyor" systems for handling of salt cake and lime. One of the two lime systems is shown here unloading a rail car (left), with lime conveyor and bucket elevator at right.

half long, built by Merritt-Chapman & Scott, general contractor.

The main sewer from the mill is of 60-in. concrete pipe which follows the line of the mill, under a road, and on for one half mile to the river. At this point the pipe changes to 72-in. diameter pipe and enters an underwater course for several hundred feet, then branches to two 36-in. underwater lines which carry effluent to the deep water channel. The total distance from the mill is 5,643 feet. There are rock-filled timber crib anchors at the discharge, and the underwater line is supported on piling. In case of future expansion, a second effluent line may be brought from the mill to join the 72-in. section at the shoreline.

Dump tanks: A part of effluent control, as well as being important in conservation of raw materials, is a system of dump

tanks large enough to take care of any emergency during temporary shutdowns. There are four of these tanks, located to take the full discharge in emergency from the washer room; the screen room; the cascade evaporators; and the causticizers. These tanks can take an emergency load of stock or liquor to avoid dumping into the sewer line, and the material can then be pumped back into the proper place in the system when the emergency is over. The saving in material alone is expected to make up for more than the cost of the tank system.

Wood Handling System

Features in wood handling include an asphalt-paved yard for wood storage; flume system for delivery of pulpwood to the barker conveyors; and an overhead

central control tower with push button controls regulating the whole system.

The U-shaped flume system is the center of the wood handling pattern. It consists of two flumes 500 ft. long and 300 ft. apart in which the pulpwood is carried by flowing water to the chain conveyors delivering wood to the barking drums. At the delivery end the flumes come together, completing the "U," bark and dirt are screened from the water and it is recirculated.

Rail tracks run along the outer side of each flume, and a truck road on the inside. So that pulpwood brought in by truck or rail can either be unloaded directly into the flumes, or can be lifted by crane into the storage piles. In practice, the trucks are unloaded by crane with slings, and the pulpwood cars by grapples. Orange peel grapples are used when un-

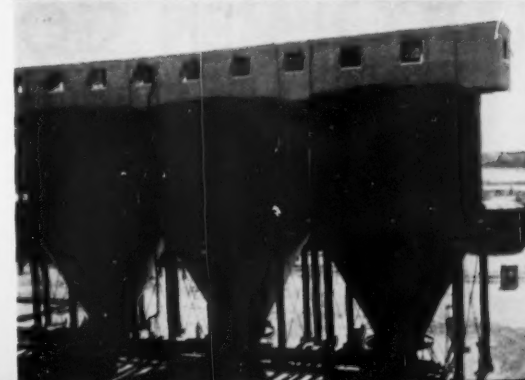
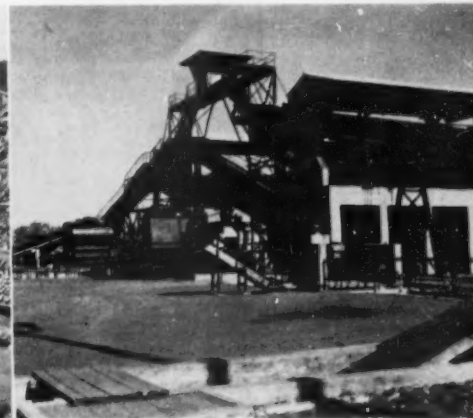
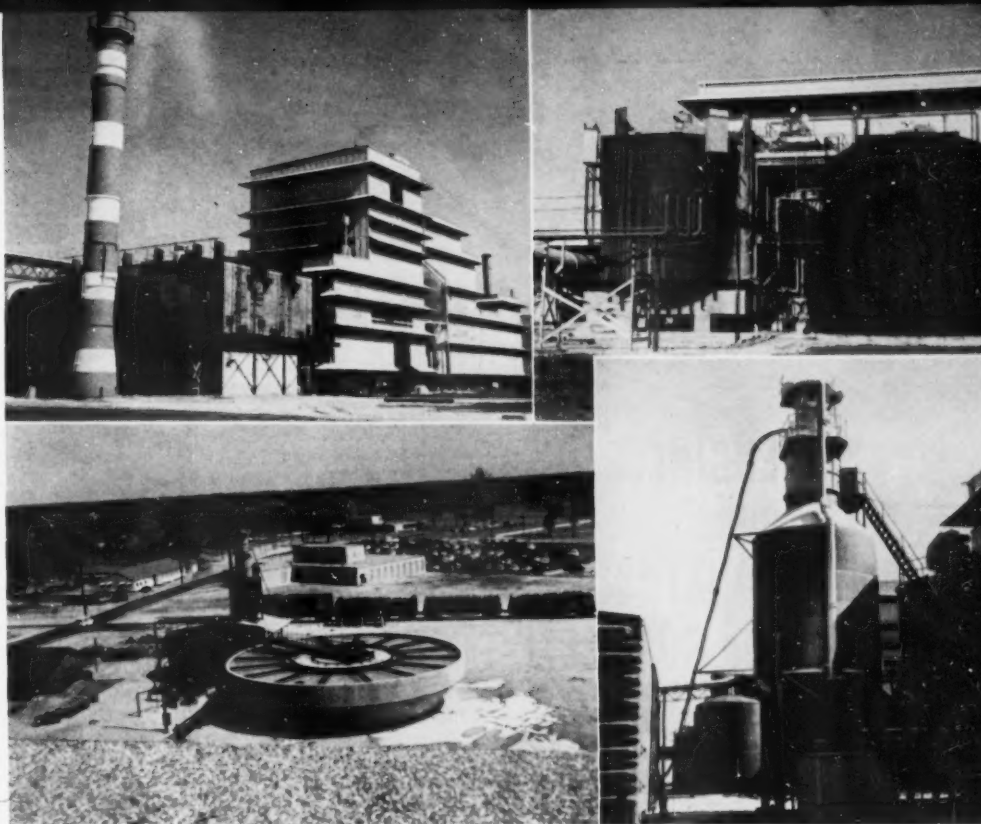
LABOR SAVING IN WOODYARD

(Top, left) SEABOARD AIR LINES pulpwood cars await unloading by P&H crane with Owens grapple alongside the East flume at Jacksonville Mill with paved wood storage areas on either side. Trucks come in on near side of flume for unloading by sling.

(Top, right) UNUSUAL, LABOR-SAVING FEATURE at St. Regis, Jacksonville, is combined water flume-conveyor system for handling pulpwood from the yard to the barking drums. This photograph, taken from one side of the U-shaped flume, shows the Fibre Making Processes barking drums at the right background; Link-Belt chain elevators leading to drums; and Link-Belt bark screens and grit collectors at center for flume water. Note also at top center the control tower for woodyard.

(Bottom, left) OVERALL VIEW OF THE CHIP SILO SYSTEM. Chips enter Chicago Bridge silos from the enclosed feeder system at the top, and are taken out for the digesters by the 17-ft. diameter Link-Belt rotary-type discharge feeders at the bottom.

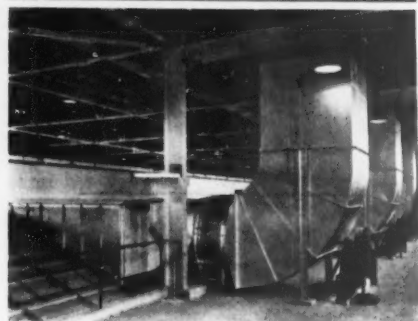
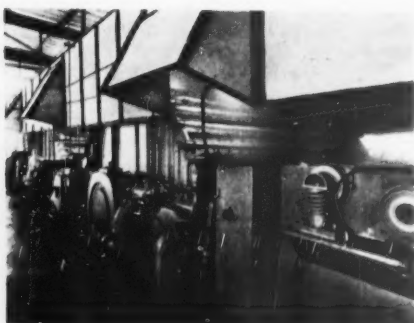
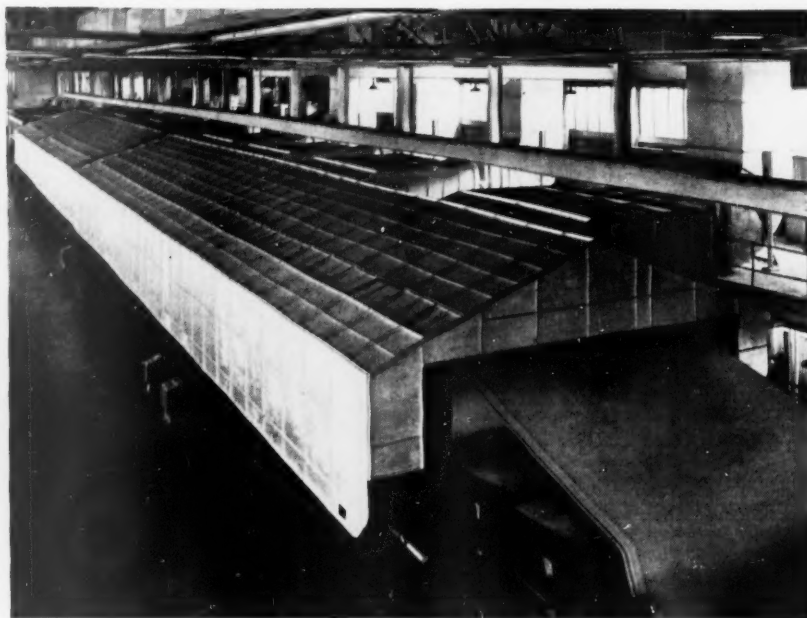
(Bottom, right) INTERESTING PATTERN OF CONVEYING SYSTEMS. Two Link-Belt conveyors start at the left, both leading from woodroom. One takes bark from drums to Combustion Engineering bark boiler, while the other delivers accepted chips to chip bins—one of which can be seen at extreme right. The other conveyor takes chips from the bottom of the silos up through an enclosed section which contains the Merrick Weightometer to digester building, which is in left center of photo.



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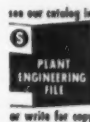
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September 1953

61

loading from the storage piles.

The flumes provide for handling wood in rotation so that no wood need be kept in storage for more than 24 days. They are concrete backed and steel lined, and approximately 3-ft. wide by 3-ft. deep with slanting aprons for unloading. Each will handle 30 cords of wood per hour in gravity flow to the chain conveyors. This is capacity for the two Fibre Making Processes 12x45 ft. barking drums.

The paved wood storage areas are in the center, between the flumes, and one on each outer side of the flumes. There is approximately 200,000 sq. ft. of asphalt-paved yard in this area (see drawing). The base is 8 in. of crushed native rock with 1½ in. of asphalt paving, and built to withstand a test of 1,000 psi. Crawler tractors have been working on this base since early this year with no breaking up of the paving. The idea of paving is admittedly experimental, and it is hoped will add improved drainage, better storage without decay, easier handling of the wood, and

lime used in mill water treatment. Each of these has an "Airveyor" system for taking material from the boxcars to the storage silos, and in the case of salt cake there is provision for handling by air to the point of use.

3. Push button control of chips from silos to digester charging. Digester operators can unload from any one of the three chip silos and deliver to any one of the four digesters from automatic control panel.

4. Automatic size system (already described).

5. Automatic liquid alum system. Through use of this system, St. Regis is able to buy concentrated liquid alum (5.1 lbs. alum per gal. of solution) which is

NOTE LINES OF MACHINE BUILDING at Jacksonville (background) as contrasted with washer room in immediate foreground. Note also design of spur lines to serve buildings so that finished rolls come out on the track next to the main building (in box cars), while second spur with tank cars serves chemical plant buildings on the right.



facilitate cleaning of debris, which may be used for fuel.

The control tower is located on a span about 50 ft. high and between the chain conveyors delivering wood to the barking drums. From this tower the operator has a full view of the woodyard, conveyors, barking drums and chip room, and he has controls to handle this activity.

In actual operation, there are two men on the cranes, one in the control tower, one sorter after each of two barking drums, and one man at the chipper throat—for a total of six men to handle the whole woodyard operation.

Labor Saving Devices

One of the important labor saving features has just been mentioned in connection with the six-man operation of the woodyard. Following is a complete list of labor saving features:

1. Woodyard mechanization and control (already described).

2. Automatic systems for raw material handling. There are three complete Fuller Co. systems for pneumatic handling of salt cake and lime. There are storage silos for salt cake at the recovery boiler, and for new lime and re-burned lime at the lime kiln. There is a smaller silo for storage of

automatically diluted on a "Treatometer." This equipment receives metered water and adds correct proportion of alum which is then delivered to a 2,000-gal. constant head tank for feeding into the system. This is all done automatically.

6. Finished roll handling. At the winder on the dry end there is a shaft puller, followed by an automatic roll lowering table, there is a floor type roll conveyor from the scales, there are automatic roll wrapping and heading machines (used primarily for export), and in the basement is an "upender" for fork truck handling of finished rolls.

7. Dust collecting. A vacuum header system on each side of the sheet at the winder and core saw collects loose dust.

8. Hydrapulper. Located under broke openings at dry end of paper machine, this Shartle-Dilts 18 ft. unit is said to be the first broke Hydrapulper on sulfate in the South. It has a W. L. Rives Co. (Jacksonville) stainless steel hopper. It is controlled from the machine room floor, and automatically returns slushed broke and trim to the system to brokechest.

Instrumentation

This St. Regis mill has 140 recording instruments, of which 40 percent are re-

corder-controllers; there are 33 control panels ranging all the way from the water plant through the paper machine with instruments on these panels numbering all the way from one to as high as 24.

Typical instrumentation are installations by Minneapolis-Honeywell Regulator, Foxboro, Bristol and Bailey. At the power plant there is a central panel board containing over 20 Honeywell flow recorders with electric integration. Flow measurements are transmitted electrically from orifices and flow nozzles in the steam lines to the recorder-integrators. The integrators provide practically continuous integration, with a 5 sec. operating cycle. Total steam flows to various mill departments can be read directly from the integrators for accounting purposes.

At the washer room, blow tank consistency is controlled by a Honeywell recorder-controller which measures the load on the agitator motor and positions a pneumatic control valve in the blow tank dilution line. The total dilution flow is recorded and integrated as well as controlled. The hot water flow to the third stage washer showers is recorded and controlled. The shower flows to the other stages are also recorded. Black liquor going to the evaporators is recorded and integrated controlled by level infiltrate tank. The baumé and temperature is recorded and the baumé is measured by a differential bubble pipe system.

Air Systems

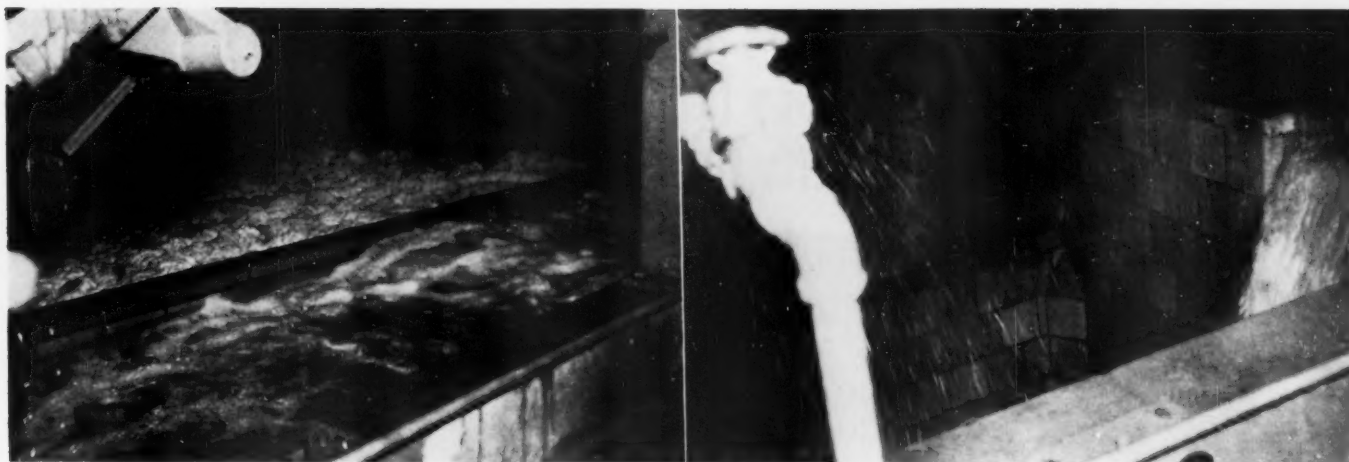
Various air supply systems and exhaust systems were furnished by Jamar-Olmen Co., with Drew Engineering Co. collaborating on general design. The dryer section hood is of standard Transite construction, 256 feet long, arranged with special lift panels in roof above dryer bearings and hinged roof panels at press sections. Seven heavy duty American Blower axial flow fans, driven by two-speed motors, adequately exhaust all vapors from the hood. A Transite hood was provided over the washer and de-knotter with two axial flow, vertical type, exhaust fans.

Automatic self-cleaning air filters were provided for nine systems that supply outside air for machine room roof, bottom felts, electric center, motor cooling, calender cooling and finishing room. The roof supply systems are arranged to direct cooling air to the operating floor at high velocity during summer season.

The bottom felt supply systems include the latest design of high velocity slot type nozzle with smooth exterior surface which eliminates interference when replacing felts. The Deco Hi-Jet System supplies air at 220 degrees through high velocity nozzles to ventilate the pockets between the dryer rolls and felts. The trim conveying system includes two adjustable type ejectors and carries trim at high velocity to the Hydrapulper.

Special filtered air systems to electric sub-stations, precipitator control room and high voltage starter cubicals, were designed to reduce service or stoppage of this electrical equipment by maintaining constant air pressures.

Other air systems provided include wet end exhaust units, hydrapulper exhaust



INNOVATION IN WIRE PITS is shown in these pictures by PULP & PAPER at St. Regis Mill, at Jacksonville. The pit is designed to effect a degree of deaeration through flow of water through channels on both sides and a discharge through the center into the fan pump. Photo at left shows pit under machine at headbox end, and at right the overflow into the couch pit. Stebbins Engineering & Mfg. Co. tile lined the pit.

system, also winder and core sawdust collecting system. Constant temperature and humidity rooms in the machine room and mill office building were provided with complete automatically controlled air conditioning units to produce Tappi standard conditions for paper testing.

The digesters have Bristol automatic controls on steam, gas off and blow back, followed by Honeywell controls on Foster Wheeler digester blow heat recovery and turpentine condenser.

The recovery boiler employs Honeywell controls on maintaining baumé and liquid level control on dissolving tanks. With these controls a selector switch is used so that liquor flow through the control valves can be reversed, thereby creating a cleansing action on the valves to prevent buildup or plugging.

Interesting instrument installation is that of smoke density indicators on the stacks to show combustion condition. This is caught by an electric eye instrument and records on a circular chart on the power plant panel board.

Bark Boiler

The Combustion Engineering, Inc. bark burning boiler is said to be the second of

a new type suspension burner to go into operation. It is said to provide better combustion by greater exposure of bark surface to the fire. The burner takes about 350,000 lbs. of bark per day from the drums and converts it into about 20 percent of the total steam requirements of the plant. Boiler efficiency is rated at 75 to 80 percent, with 3.9 lbs. of steam per pound of bark produced at 5200 B.t.u.'s per lb.

Hogged bark is fed by a variable screw conveyor from the bark storage bin to four mechanical spreaders which eject the bark into the furnace. Fine bark is burned in suspension after it is ejected into the furnace chamber and the coarse particles drop onto the traveling stoker below, to complete their combustion.

Miscellaneous Features

Wire Pit: The wire pit is an innovation with St. Regis, and is designed for horse-shoe-shaped flow to permit some deaeration. It is completely tile lined. Water from the wire discharges into the channel on both sides of the wire pit and flows towards the couch pit, passes under a wall, goes down a channel in center of the wire pit and discharges into a 72-in. stainless steel reducing elbow to the 30,000 gal. fan pump. The water passing under the wall holds back foam which would otherwise carry into the couch pit.

Press Pick-Up: A straight-away vacuum pickup system is to be installed on the Beloit paper machine. This system includes a vacuum pickup roll off the wire,

followed by a transfer press, a first press and an inverse suction press going into the dryer press. With this pickup it is hoped to be able to run lightweight sheets at high speeds without wet end breaks—and to get speeds close to 1500 or more feet per minute.

Piping: Although the mill does not bleach at the present time, non-corrosive piping and fittings by W. L. Rives Co. of Jacksonville and Crane Co., Chicago, are used extensively throughout the mill and there are Transite and stainless steel headboxes. Saran lining is used on alum lines both in the paper mill and for water treatment. William Powell Co., of Cincinnati, supplied special stainless valves.

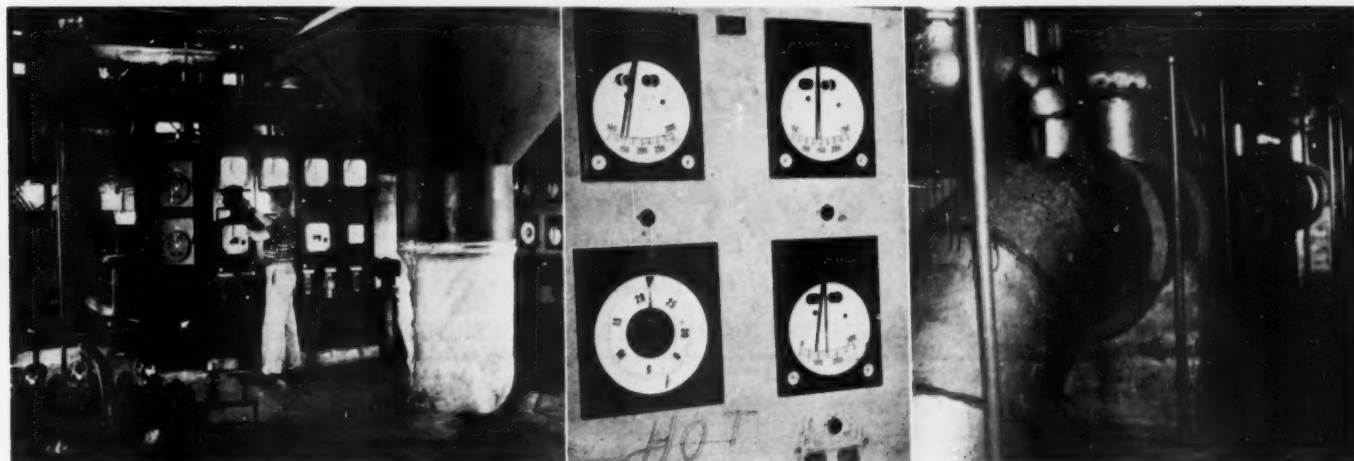
Wood Room Details

Pulpwood is stored on the paving in piles 35 ft. high. Unloading from railroad rack type cars

(Left) **SOME IDEA OF EXTENSIVE INSTRUMENTATION** at Jacksonville can be seen in this shot taken from the digester room floor. In center background are instruments for Chicago Bridge digesters and chip loading, while at extreme right is the panel for heat recovery system.

(Middle) **ANOTHER THOROUGHLY INSTRUMENTED MILL** is the Jacksonville plant. This Minneapolis-Honeywell control panel on the Foster Wheeler heat recovery system is one of 33 instrument panels used in the operation. The system has 140 recording instruments and more than 40,000 ft. of instrument tubing. Heat recovery is automatically controlled through Baumé and liquid level controls—side by side.

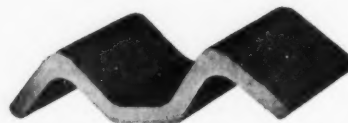
(Right) **INTERESTING CONSTRUCTION** is the stainless steel header for stock to screens equipped with Wm. Powell Co. flow valves. The header, and other stainless steel work, were fabricated by W. L. Rives Co. of Jacksonville.



Bark Hard or Soft Woods up to 8' in Length Wet . . . Dry . . . or Combined Dry and Wet With F.M.P. Welded M-Bar Barking Drums



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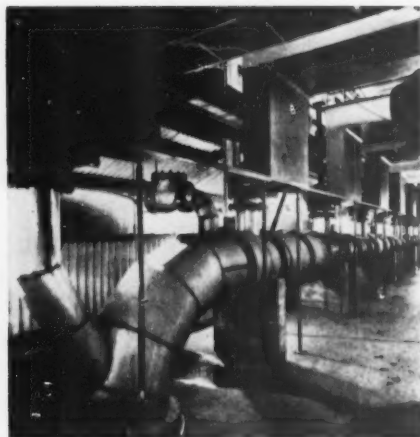
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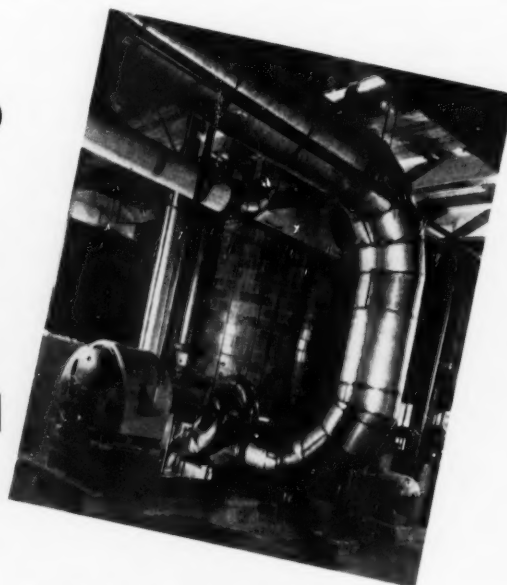
Tribune Tower, Chicago 11

Russ Bldg., San Francisco 4

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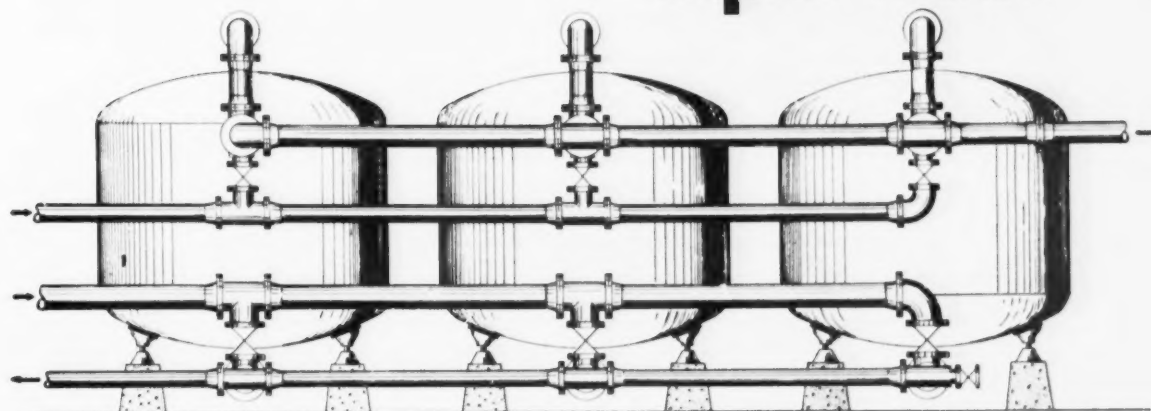
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or trucks, either to storage, or directly to the flumes, is by means of two P & H crawler whirley cranes, with Owens pulpwood grapples furnished by Southern Corp. Two 16,000 gpm circulating flume pumps are driven through V-belts by 100 hp motors, and are pit-located. Grit collectors and travelling water screens are furnished by Link-Belt, as are all wood, bark and chip conveyors.

The Fibre Making Processes barking drums are suspended by chains and each is driven by a 150 hp, 720 rpm motor. De-barked wood travels up inclined conveyors to two 88-in. 10-knife chippers, built by D. J. Murray Mfg. Co., each V-belt driven by a 400 hp, 720 rpm motor. Bucket elevators convey the chips to four feeder-equipped Link-Belt vibrating chip screens. Oversize chips and slivers are carried to a 36-in. hammermill chip crusher, built by D. J. Murray, and are then returned to one of the elevators. Sawdust and fines drop to a 36-in. belt conveyor, which also receives crushed bark outside the woodroom, for travel overhead to bark boiler.

Accepted chips travel on a 36-in. belt parallel to the bark conveyor and up an incline to be distributed by a 36-in. conveyor with tripper to three 42-ft. diameter steel silos 65 ft. high.

Link-Belt chip silo rotary plate discharge feeders are 17 ft. in diameter and deliver chips to a 42-in. belt. This takes chips to the digester building. The conveyor passes over a Merrick Weightometer and a magnetic pulley which removes any particles of metal.

Pulp Mill

The digester building is 30 ft. wide by 82 ft. long and has a 36 ft. ell which houses the measuring tanks and turpentine recovery. There are four digesters, 46 ft. flange to flange and 12 ft. inside diameter, 4,000 c.f. volume, furnished by Chicago Bridge, Electric Steel Foundry Co. circulating systems are installed, with Bingham pumps and provision for future indirect cooking. Blow valves, by Paul Valve Corp., are operated by hydraulic equipment by Racine Machine and Tool Co. A 48-in. belt shuttle conveyor, by Link-Belt, fills digesters through overhead rail mounted hopper. Automatic digester controls are by Bristol.

The digester blow tank has an Impco agitator. Heat recovery equipment consists of a blow steam condenser, accumulator, circulating pumps, regulators, strainers and heat exchangers

by Foster-Wheeler, who also supplied a turpentine recovery system.

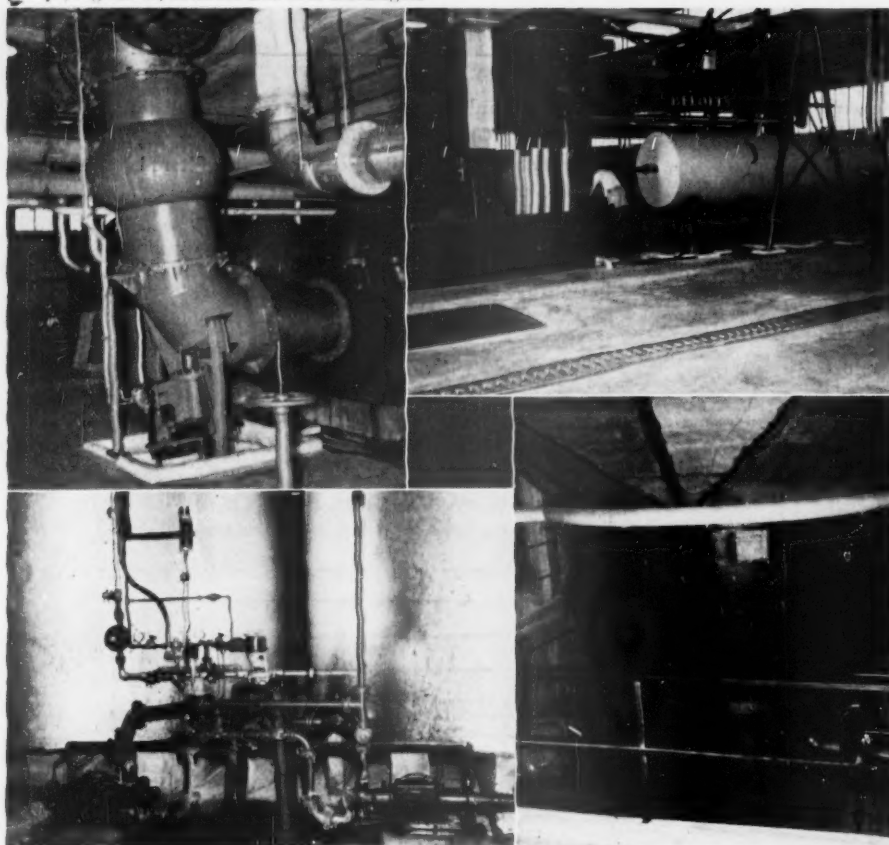
The washer room is an extension of the digester room ell, 36 ft. wide and 95 ft. long and contains three 11 ft. 6 in. x 16 ft. Impco brown stock washers with repulpers and vibratory de-knotter. Three filtrate tanks, and one foam tank, are in the tank area adjacent to the washer room.

The screen room is 74 ft. wide by 110 ft. long and contains 22 Impco 14-plate flat screens in lines of two screens per line, arranged for 16 primary screens and 6 tailings screens, the latter provided with scrapers. Screen rejects are discharged to a Bauer Refiner or to rejects storage when the Bauer is out of service. There are two vacuum deckers by Impco 8 ft. in diameter by 12 ft., and peg-roll repulpers, discharging vertically into 14 in. screw conveyors. These reverse so as to discharge either at high density to a 24-in. belt conveyor furnished by Link-Belt, or directly to the decker chest, after dilution. The belt conveyor travels over an inclined bridge



FRED C. GOODWILL (left), newly appointed Assistant to Vice President in Charge of Mfg., St. Regis Paper Co. For several years Mr. Goodwill has been Res. Mgr. at the Kalamazoo, Mich., mill. He formerly was in key posts in North N.Y. mills and was former Tech. Director at Deferiet, N.Y. He will be Asst. to Vice Pres. W. R. Adams.

U. J. WESTBROOK (right), Manager of Pulp and Paper Production for the Southern Division of St. Regis—overseeing production at both the recently expanded Pensacola, Fla., mill and the new Jacksonville mill.



from the screen room to the high-density pulp storage tanks at the end of the beater room across the main plant roadway.

There is a screened stock chest 67 ft. long with seal pit and white water chamber in the basement of the screen room. A similar chest serves for inprocess storage of washed stock ahead of the screens. These chests and pits, together with the screen rejects chest, are constructed of Semtile by Stebbins Engineering.

Chemical Recovery and Liquor Making

The sextuple effect evaporator was furnished by Goslin-Birmingham, equipped with liquor pumps, condensate and transfer pumps, pumps for cooling water and soap handling.

The recovery boiler, designed to burn 900,000 pph of dry solids is by Combustion Engineering. It produces 134,000 pph of steam at 625 psi and 750° F. An Elesco special design superheater, water wall furnace, Diamond soot blowers, economizer and D. J. Murray cascade evaporators are included. The recovery building, 100 ft. high, has an Otis, 7-stop, elevator.

As previously noted, salt cake is unloaded from box cars, delivered to storage bins, and transported from storage to a process supply bin by means of a Fuller Airveyor system. This system employs a four compartment filter, rotary discharge lock, motor operated gate and cyclone receiver, 12-in. Jeffrey screw conveyors, pan feeders, and pulverizer.

Two electrostatic precipitators by Koppers recover chemicals and abate odors in the spent gases from the recovery boiler. This equipment is of generous capacity in line with assurances given by the company to the people of the community. Each precipitator is designed to handle the total flue gas volume with the other one available at all times as a spare, and each unit is furnished with a complete set of auxiliary equipment. Removal efficiency of 95 percent is guaranteed, which sets a maximum not to exceed 125 grains per cu. ft. of residual dust at the precipitator under normal operating conditions. The stand-by precipitator can be kept warm at all times and ready for instant startup.

In the causticizing plant, there is a Darco lime slaker; also, three causticizing reaction tanks; a green liquor and white liquor clarifiers, mud washing and thickening tanks, and a dregs washer. In addition, Worthington liquor pumps and Oliver United mud filter are used. The special water-jacketed kiln feed conveyor is by Link-Belt. Fresh lime is unloaded from box cars and delivered to storage by Fuller Airveyor. The lime kiln is 9 ft. in diameter by 175 ft. long, furnished by Traylor.

Steam Power Plant

To provide total steam requirements of the mill, there is, in addition to the recovery boiler, an oil fired power boiler capable of 160,000 pph at 625 psi and 750° F. The Combustion Engineering design includes an Elesco interbank superheater, a tubular air preheater, a steam air heater, draft fans and soot blowers.

A Combustion Engineering bark boiler, previously mentioned, is capable of producing 135,000 pph of steam at the above condition.

Three Ingersoll-Rand 7-stage feed water

(Top, left) STOCK AND WHITE WATER PIPING at the 30,000 gpm fan pump slopes upward in direction of flow to permit release of air, either to vacuum or to atmospheric vents. Pump has direct General Electric 350 hp 450 rpm drive and a Beloit tear-drop valve throttles the pump discharge.

(Top, right) LABOR SAVING EQUIPMENT at the dry end of the new St. Regis Jacksonville paper machine includes shaft puller, Link-Belt roll lowering table, and Link-Belt floor type roll conveyor—all shown in this photograph.

(Bottom, left) CONSIDERED AN IMPORTANT LABOR SAVING DEVICE is the Proportioners "Treatometer" which automatically treats water with alum and feeds it to the system. Saran lined pipes and valves are used to combat corrosive effects.

(Bottom, right) FIRST BROKE HYDROPULPER on sulfate kraft in South is this installation by Shartle-Ditts directly under the last machine dryer. It can receive broke from the dryer, calender stacks, the reel and trim from the winder. The 18-ft. stainless steel hopper was fabricated by W. L. Rives Co. of Jacksonville.

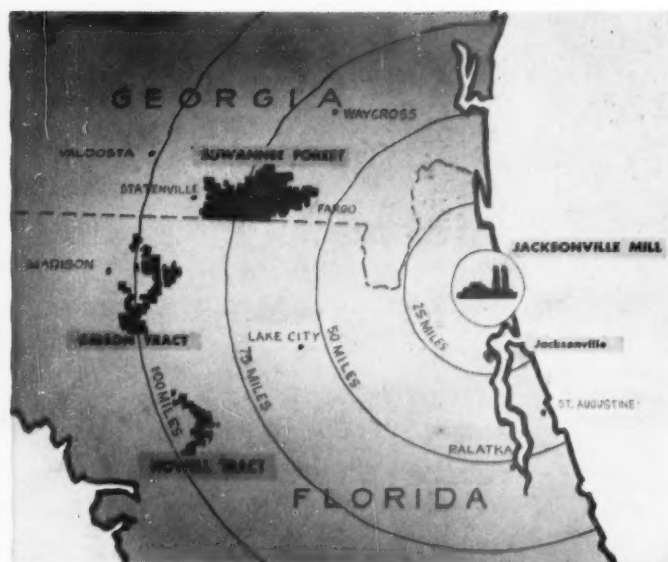


PRODUCTION IS UP at Beloit Iron Works, the result of plant expansion, new machine tools, and reorganization for greater efficiency. Delivery of paper machinery on order has been speeded by increased specialization. Such, for example, as in the new dryer shop, 275 feet long, where each skilled craftsman concentrates on a single phase in the building of heavy-duty dryers.—*Beloit Iron Works, Beloit, Wis.*

BELOIT

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!

PAPER MACHINERY



THIS MAP SHOWS the Wood resources held by St. Regis Paper Co. in Florida and distances from the new mill built at Jacksonville, Fla.

pumps serve all three boilers; two are driven by 311 hp Terry turbines and one is motor driven. Feed water conditioning equipment is by Graver Water Conditioning Co. and consists of hot lime process sedimentation tank, chemical feeds, pressure filters, zeolite softeners, automatic desludging controls, Ingersoll-Rand backwash, booster and chemical pumps and Milton Roy chemical feed pumps.

Electric Power Plant

The turbine room is 50 by 120 ft., adjoining the power boiler room and houses two 6,000 kw, 4,160 volt, ac, 8 pf, General Electric turbo-generators and the electric feeder distribution switch gear. Each unit is designed for operation with steam at the throttle of 625 lbs. gage and a total temperature of 825° F., but will be operated at 750° F. One unit is provided with a 9,500 sq. ft. surface condenser, and auxiliary equipment and is arranged for extraction of steam at 65 psi gage. The other unit is arranged for extraction at 165 psi gage and exhausts at a back pressure of 65 psi gage. The arrangement of electric power distribution from the turbine room switchboard consists of transmission at 4,160 volts through feeders to starting controls of the 4,160 volt motors (200 hp and above) and to several 1,000 and 750 KVA transformer power centers located in the mill, from which the 440 volt distribution feeders are run to the various motor control and lighting centers.

Two Goulds pumps furnish brackish river water to the turbine condenser. These are located in a pump house at the water's edge, together with a Rex travelling water screen furnished by Cham-Belt Co. A Wallace and Tiernan chlorinator is used.

Stock Preparation

There are two 3-roll Noble & Wood Victory heaters, each roll driven through V-belts by General Electric 300 hp synchronous motors in the first 140 ft. area of the 660 ft. machine room. Four Emerson jordanans are driven by General Electric 400 hp synchronous motors. Piping is arranged for any desired combination of heaters and jordanans. The control cubicles are on the mezzanine floor.

An 8 by 16 ft. Oliver United vacuum saveall is on a platform extension of the mezzanine floor. DeZurik consistency regulators serve heaters and jordanans. Two 30 ft. diameter chests for high-density stock are outside the end of the heater room. They are of Semble by Stebbins and furnished with Impco agitators and nozzles. Four concrete stock chests with mid-feather are equipped with horizontal agitators by Impco, and are in the heater room basement. Stock and water pumps are furnished by Goulds Pumps, Inc. and piping for stock and white water lines is Transite with fabricated stainless steel fittings. All concrete chests and various pits and chests under the machine are lined with Semplate tile by Stebbins.

Paper Machine

The Beloit Fourdrinier has a wire 230 inch

wide by 120 ft. long. A cross flow distributor serves a Beloit pressure vacuum headbox with two rectifier rolls and adjustable slice with two rectifier rolls. The breast roll is 32 in. in diameter and forming board is stainless steel with Panelyte blades and mountings. The table rolls are of aluminum Panelyte covered. There are ten stainless steel suction boxes. Wet boxes have Panelyte covers with slanting drilling and dry boxes have end grain maple covers. Wire guide and return rolls are of steel tube with heavy brass covers. Inside rolls need not be removed for wire change, which is accomplished by conventional removable Fourdrinier. The high speed shake is a multiple unit driven by adjustable speed dc motor, each unit separately adjustable. There is a 24 in. dandy roll. The lumpbreaker roll is 20 in. in diameter with Neoprene cover. The saveall is of stainless steel carried on the main Fourdrinier beam. The felt rolls are 165 in. diameter, rubber covered.

The fan pump is of 30,000 gpm capacity, by Worthington and direct connected to a G-E 350 hp 450 rpm synchronous motor. All stock and white water piping associated with the machine inlet is fabricated of stainless steel with horizontal runs sloped upward in the direction of flow to permit release of excess air, either to vacuum or to atmospheric vents.

The wire pit is arranged to give the utmost stilling effect for release of excess air, as previously noted. The press section is of Beloit vertical type, consisting of two 36 in. rubber covered suction rolls equipped with saveall and air loaded packing holders and two 34 in. diameter top press rolls with rubber covering. There are two Vickery felt conditioners, each having four Jordan reverse type heads. For water and air removal requirements, there are nine vacuum pumps made by Nash Engineering.

The roll covering, previously noted, was by Stowe-Woodward. Other Stowe-Woodward roll covering is described in the dryer section.

The dryer section of the machine consists of 71 paper dryers and 18 felt dryers, all 60 in. diameter, arranged as follows: 1st dryer section—20 paper dryers and 6 felt dryers. 2nd dryer section—18 paper dryers and 6 felt dryers. Breaker stack—one bottom roll, 35 in. diameter, covered with Stonite; one top roll 34 in. diameter, covered with rubber; located between the 2nd and 3rd dryer sections. 3rd dryer section—18 paper dryers; and 4 felt dryers. Size press—one bottom roll, 33 in. diameter, covered with white Stonite; one top roll 34 in. diameter covered with rubber; located between the 3rd and 4th dryer sections. 4th dryer section—15 paper dryers and 2 felt dryers.

All dryers are designed for operation at 125 lb. steam pressure. Dryer bearings are heavy duty spherical roller self-aligning type. Dryer frames are box type with back frame completely enclosing gears and bearings. Helical gears of small diameter are arranged for idrive at one point in each section. The Bowser circulating oil system is complete with tanks, pumps, filters and regulating equipment.

A low pressure blower system is supplied to keep a slight pressure in the drive gear en-

closure frames to minimize foam and vapor condensation. Loading doctors with air oscillation are provided for the first bottom dryers and last top dryers in each section. The dryer section is equipped with automatic rope carriers. Also, a short rope carrier is provided at the reel. A Midwest-Fulton dryer condensate removal system is installed.

Two Beloit open-sided calender stacks have 34 in. king rolls and seven 16 in. intermediate and top rolls. All have flexible blade doctors, air loaded. Bottom doctors are oscillating type. Each stack has motor operated roll lift and air loading.

The reel is a Beloit heavy duty type having a 36 in. diameter drum, taking a maximum 84 in. reel of paper. The unwinding stand has adjustments for aligning the reel spools across the machine and in the machine direction. Regenerative breaking is employed. The winder is a Beloit extra heavy duty machine with two 20 in. drums with individual motor driving each drum. Designed for a maximum speed of 4500 fpm the winder is equipped with motor driven shear type back slitters, rider roll lift and roll ejector. The broke Hydrapulper has already been described.

The paper machine is designed, and all rolls balanced, for a maximum mechanical speed of 2,500 fpm. Pneumatic systems for the paper machine are served by Chicago Pneumatic Tool Co. compressors.

Equipment is on order for an inverse 2nd press, conversion of present 1st and 2nd presses to suction transfer press and 1st suction main press, respectively, and the addition of a suction pick up roll, wire turning roll, necessary felt equipment, Vickery conditioner, vacuum pumps and machine drives.

The machine room crane is of twin box girder bridge design with two 15-ton trolley hoists, made by Ederer Engineering Co. of Seattle. Reel crane is a 20 ton overhead bridge with a fixed hoist by Manning, Maxwell & Moore.

Paper Machine Drives

General Electric sectional electric motor drives have Farrel-Birmingham herringbone reducers and are energized by multiple m-g sets with electronic amplidyne regulation. These include two 1,500 hp 4,160 volt synchronous motors driving individual generators for all sections from couch to winder, all installed in two separate enclosed electrical rooms on the ground floor of the machine room.

The machine drive has General Electric electronic control, with speed regulators for each section plus potentiometer maintenance of sheet tension at the dry end. Photoelectric equipment stands guard over dryer felt alignment and squirt actuation in case of breaks.

Finishing Room

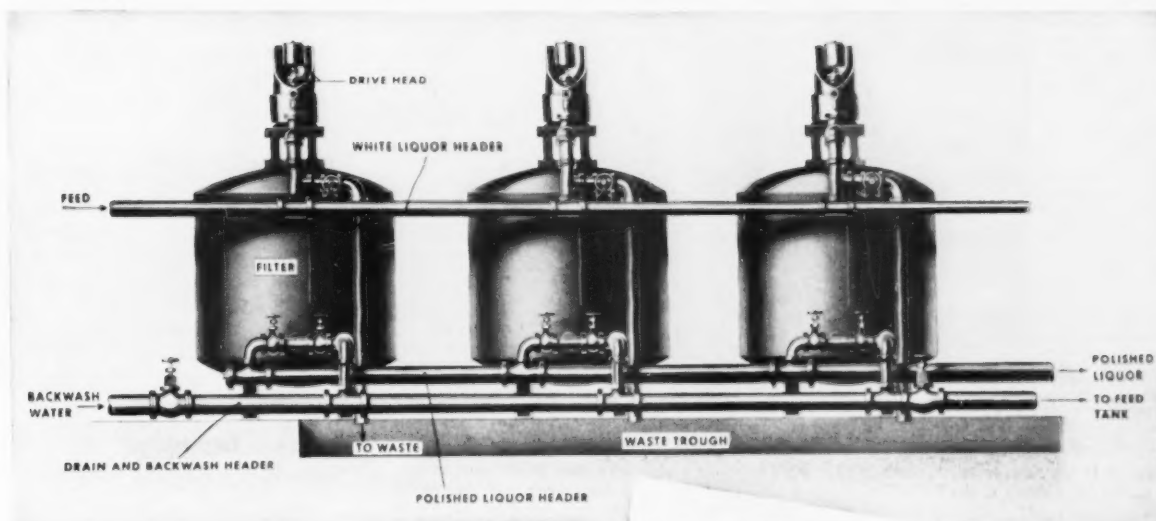
The finishing room is a 240 ft. extension of the machine building. Equipment includes rotary cutters with backstands and 110-in. duplex layboy furnished by Moore & White; a Harris Scyhold trimmer with backstage travel; a 15 ton hydraulic elevator furnished by Otis; a re-winder with unwind stand and an automatic roll ejector furnished by Langston; and in the basement, a Link-Belt paper roll upender. Other finishing equipment, located in the end of the paper machine room, includes a roll wrapping machine with backstand and a roll heading machine furnished by Lamb-Grays Harbor Co. of Hoquiam, Wash.; also, a Link-Belt Lowerator for lowering rolls to the first floor and a Link-Belt floor type paper roll conveyor 75 ft. long for transporting rolls sideways into alignment with finishing room equipment. S. C. Rogers & Co. provided a slitter grinder.

Water Supply

Water for the new mill is taken from two Layne-Atlantic Co. wells of generous capacity. Three smaller Layne-Atlantic wells are provided for observation and permanent record of the water table in the vicinity. The water purification system is by Indlico, Inc. of Tucson, Ariz., and consists of a 12,000,000 gal. per day accelerator for selective lime softening, coagulation and clarification, water control and proportioning equipment, chemical feeding equipment, a turbidity detector, a Milton Roy alum pump, a Wallace and Tiernan chlorinator, and Builders-Providence controls.

What's New in Reausticizing Practice?

The DORRCO White Liquor Polishing Station



Designed to fit in as an integral part of new or existing Dorr Continuous Reausticizing Systems, the White Liquor Polishing Station consists of one or more vertical pressure filters and all necessary piping, valves and control instruments. While this development is of particular importance to producers of bleached and dissolving pulps, the assurance of a cooking liquor of uniform purity and clarity is of interest to every producer in terms of better overall operation.

For further information on the Dorrco White Liquor Polishing Station, write The Dorr Company, Stamford, Conn., or in Canada, The Dorr Company, 26 St. Clair Avenue East, Toronto 5.

Facts on the DORRCO White Liquor Polishing Station

Filtering medium of graded anthracite coal entraps colloidal material too fine to be removed economically by gravity.

A uniformly bright pulp is assured regardless of variations in settling and slaking conditions in the reausticizing operation.

A built-in, motor-driven agitator operated during backwashing aids in releasing entrained impurities, breaks up the film of impurities on the surface of the bed and maintains the anthracite bed in good condition.

Exceptionally long filter runs are obtained . . . up to 24 operating hours; with short, 10-20 minute backwashing cycles.



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WHAT'S DOING IN RUSSIAN MILLS

ТЕХНИКА ПЯТОЙ ПЯТИЛЕТКИ

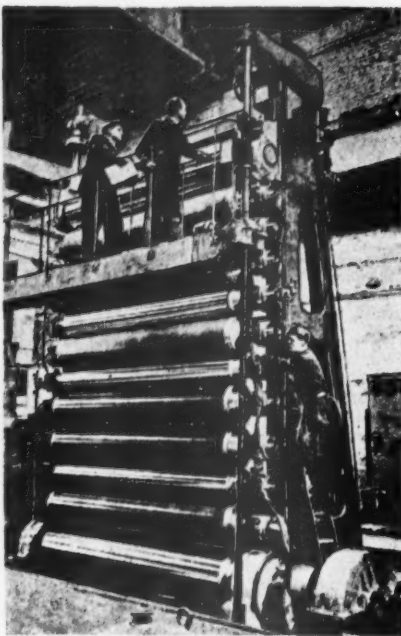
НОВЫЕ МАШИНЫ ДЛЯ ПРОИЗВОДСТВА БУМАГИ

Директивы XIII съезда партии по пятому пятилетнему плану предусматривают всемерное развитие в нашей стране бумажной и целлюлозной промышленности. С этой целью увеличивается выпуск высокопроизводительных машин, совершенствуется технология производства.

Советская целлюлозно-бумажная промышленность широко оснащается современными видами оборудования. За последние годы машиностроительные заводы освоили производство новых типов машин и агрегатов, успешно применявшихся на предприятиях. Новые машины позволяют значительно увеличить выпуск различных сортов высококачественной бумаги.

Работники научно-исследовательских институтов, конструкторских бюро и творческих союзов с новаторским производством ведут большую работу по дальнейшему развитию техники. Широко используя достижения науки и передовой практики, они совершенствуют технологию производства, создают новые машины и механизмы, повышающие производительность труда в этой важной области народного хозяйства и улучшающие качество продукции.

Производство бумаги — формование, прессовка, сушка и калибровка (глажение) — осуществляется на машинах-агрегатах, выполняющих все эти операции непрерывным процессом. В настоящее время такие агрегаты работают со скоростью формования до 400 метров бумажного полотна в минуту. Сейчас советские кон-



На снимке: регулировка суперкалендера — машины для уплотнения бумаги и придания ей гладкости.

структоры проектируют новые агрегаты, которые будут работать со скоростью формования до 600 метров бумажного полотна в минуту.

Большое внимание уделяется выработке высококачественных и специальных сортов бумаги. Для этой цели созданы конструкции различных вспомогательных машин, позволяющих повысить качество разрыва древесной массы, улучшить очистку этой массы, обеспечить равномерное поступление ее на формование и другие.

Для разглаживания бумаги, придания ей плотности и доска изготавливаются машины, называемые каландрами и суперкаландрами. Каландры выполняют операции глажения бумаги. Суперкаландры применяются для повторной обработки бумаги с целью получения большей плотности, гладкости и доски.

Ленинградский завод имени Второго пятилетия изготовил двенадцатицилиндровый суперкаландер для получения писчей бумаги средней плотности. Высота машины — 7,7 метра, ширина — 4,5 метра и вес — 66 тонн. С помощью этого агрегата выпускается в минуту до 400 метров полотна бумаги шириной 2.520 миллиметров.

В новом суперкаландере предусмотрено более высокое давление на бумагу, которая пропускается между валами. Это даст возможность улучшить качество выпускаемой бумаги.

THIS PHOTOGRAPH and story appeared in June 11, 1953 issue of Soviet Union newspaper, "Pravda." Heading at top reads: "Machinery of the Fifth Five-Year Plan—New Machines for Producing Paper," and the caption under the photograph says: "Adjusting a supercalender, a machine for increasing density of paper and making it smooth." The story says Fifth Five-Year Plan envisages comprehensive development of paper and cellulose industry,

with an increase in output of high-productivity equipment. It states machines operate at speeds as high as 400 meters per minute and that Soviet designers are working to step up these speeds to 600 meters per minute. A factory in Leningrad is reported to have manufactured a 12 cylinder supercalender for producing writing paper of average density which is 7.7 meters high and 4.5 meters wide and weighs 66 tons.

Appleton Wire Works Starts Up Widest Loom

Appleton Wire Works, Appleton, Wis., has started up the widest Fourdrinier loom in the U.S., with weaving width of 288 inches, according to word from William E. Buchanan, president and general manager. Its first wire was for a 272 inch machine in Virginia.

This is the company's 21st loom since 1945, all 184 inches or wider, and its 85th loom in all. Dollar investment in the plant has quadrupled since 1945.

Appleton Wire's first wire was shipped in 1896 to Telulah Paper Co., now part of Fox River Paper Corp., Appleton, and its 100,000th wire, 246 inches wide and 108 ft. 2 inches long, was shipped to Niagara, Wis., on last July 8. Nine 50-year employees, three retired, received \$100 bills to commemorate the event.

New Newfoundland Mill?

The British and Newfoundland Corp., representing a score of industrial and financial companies, has been given long-term water rights in Newfoundland and a 20-year option on 1,480 square miles of timber in Lake Melville area. It is expected to sell some pulpwood to Bowaters Newfoundland and Anglo Newfoundland mills, although there have been reports it may build its own mill.

Newspaper Backing Sought For Ohio De-Ink Mill

There have been no definite developments in the proposed big four-machine de-inking newsprint and board mill for Portsmouth, O., which has a prospectus and is in promotional stage, with newspaper backing in Ohio being sought.

Engineering Construction Corp., Chicago, headed by Ernest A. Wiberg, who are doing work for the Atomic Energy Commission in that area of Ohio, are associated with the mill plans. It was proposed that the mill get power from the new AEC power pool there.

Sulfite Evaporation Plant Makes Millionth Gallon

Rhineland Paper Co.'s Rosenblad type General American sulfite liquor full-scale evaporation plant made its 1,000,000th gallon of concentrated extract Aug. 10. It started up last November. To make this quantity took 8,000,000 gals. of liquor.

The millionth gallon, and 2,999 other gallons, was shipped to a Wisconsin chemical manufacturer for products ranging from food flavoring to ingredients for storage battery plates and agricultural chemicals. About half the production has been sold to industries for various products; the other half has been burned in the Rhineland mill's boilers.

It's Charmin Paper Mills Now—Pronounced "Shar-min"

It is Charmin Paper Mills, Inc., of Green Bay, Wis., and not Hoberg Paper Mills.

The way to pronounce it is "Shar-min," accent on the first syllable.

J. J. Conway, president and general manager, confirmed this correct pronunciation to PULP & PAPER, but to anyone who has been listening to radio advertising of the Charmin and Evergreen lines of paper products in the Midwest, it was no secret. And soon they will be advertising on TV. Mr. Conway explained this was why directors and stockholders voted to make Charmin the company name, too.

Charmin Paper Mills ranks fourth among producers of personal use paper products. It makes 225 tons a day. The original John Hoberg company was founded in 1892.

New Kraft Mill in Japan

The best equipped kraft pulp mill in the country has gone into operation at Kasugai City, Aichi Prefecture, Japan, built by Oji Paper Mfg. Co. It will make 130 tons of kraft pulp daily.

Power machinery was made by Mitsubishi Shipbuilding Co. The site is a former army arsenal where buildings were converted to mill use.

Fowler Discusses Canada's Rising Costs

Rising costs constitute one of the industry's most critical problems, R. M. Fowler, president of the Canadian Pulp and Paper Association, Montreal, told the annual meeting of the Investment Dealers Association at Bigwin Inn, Ont., recently.

"The days of easy progress appear to be over," said Mr. Fowler. "The industry is still operating at a high level of activity, but it is no longer enjoying full order books nor able to operate quite at full capacity."

"The problems mainly seem to be those arising from rising costs, and their solution can only be found in the reduction of costs."

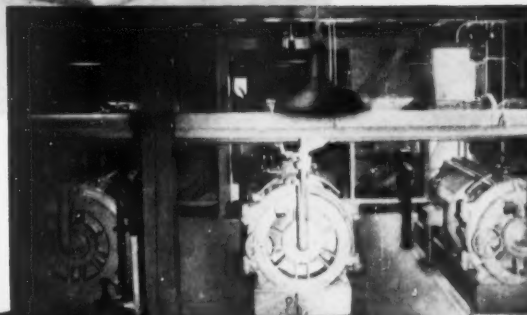
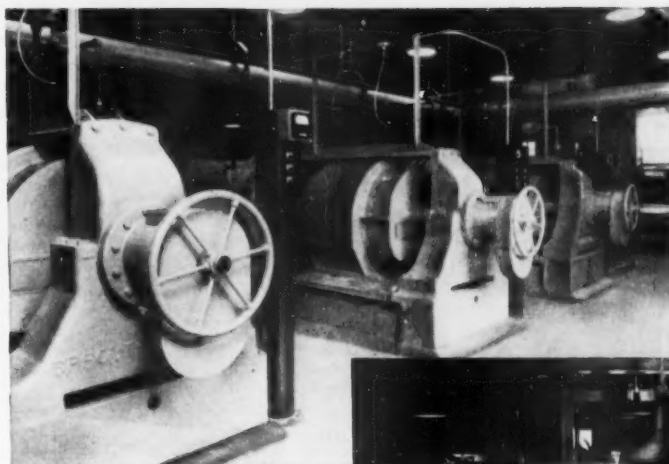
"In Eastern Canada, wood costs are probably the highest in the world. The burdens imposed by government levies are high also—not only in the form of income taxes which naturally fall as profits fall, but also in the form of ground-rents, fire dues and cutting rates which go into the cost of pulpwood. And labor rates are absolutely and relatively high, and are under heavy pressure to go higher. . . . At a time when the whole industry is moving out of a period of rapid expansion it would only be the part of wisdom for labor in its own long-term interests to consolidate its gains and refrain from adding to costs of production that are already too high."

Mr. Fowler emphasized the industry "is overwhelmingly an export industry, facing vigorous competition in world markets." He said there was already considerable evidence, particularly for market pulps, that Canadian costs are not fully competitive with those of other producing countries.

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PULP DIVISION USES

Sprout-Waldron Refiners



THE FIRST HIGH YIELD KRAFT PULP MILL ON THE PACIFIC COAST

uses three Sprout-Waldron 450 h.p. 36-2 Refiners
for Hot Brown Stock Refining

high capacity

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The
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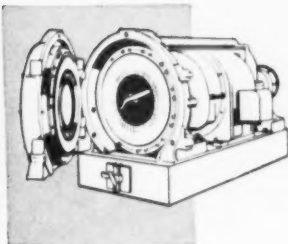
high pulp quality

rugged construction

Does High Yield Kraft Pulping fit into your plans?

Send for Bulletin 92—"High Yield Kraft Pulping—a Process Study".
Sprout-Waldron & Co., Inc., 32 Logan Street, Muncy, Pennsylvania.

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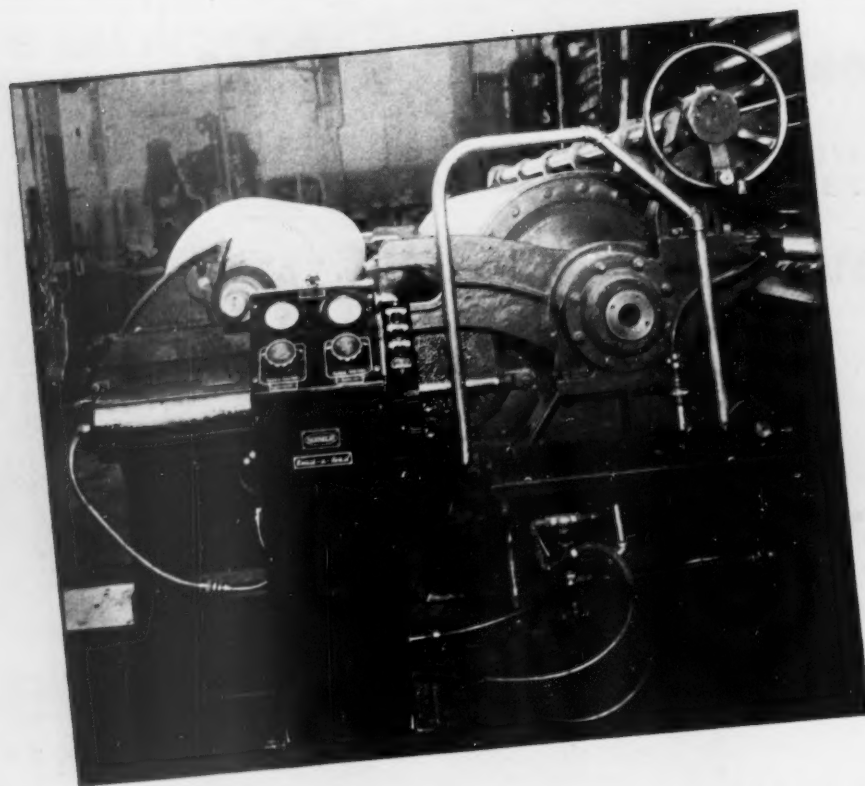
SPROUT-WALDRON

PULP REFINERS

September 1953

267

71



Modernize with a **NEW** **Pusey Jones Reel...**

Since the introduction of the Pusey Jones Improved Type Uniform Speed Reel several years ago, numerous installations have been made in connection with new machines and to replace obsolete equipment on existing machines.

In many instances, the satisfactory performance of a new Pusey Jones Reel has resulted in subsequent orders from the same mill.

An outstanding feature of this Pusey Jones unit is the pneumatic adjustable loading mechanism which greatly simplifies reel changes and gives added safety to the operation. There's no loss of valuable production time. Operation is at constant paper speed. Controlled tension and accurate roll-to-drum pressure results in uniform rolls. Smoother winding and ease of operation are additional features.

Find out how a Pusey Jones Improved Type Uniform Speed Reel can improve your production and give you more uniform paper rolls for better profits. Write us today — we will have our District Representative call.

THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-Making Machinery

*Fabricators and Welders of all classes of Steel
and Alloy Products*

Wilmington 99, Delaware, U.S.A.



HERE AND THERE IN MIDDLE WEST AND LAKE STATES—MILLS ARE MAKING LOTS OF PAPER, BUT THERE WAS TIME TO CHASE LITTLE WHITE BALLS



IN SUMMER MONTHS THESE FACES might be seen on some of the fairways in Midwest or Lake States. Snapped at different locales by PULP & PAPER, they are familiar to the pursuers in those parts of the little white pellet. L to r: JACK HAYES, Appleton Mfg. Co.; RAY TOTTEN, of Ciba, Appleton, Wis.;

TOM PALMER, paper industry expert for Trenton, N. J., Times, and its Manistique, Mich., mill; JOHN QUACKENBUSH, Perkins-Goodwin, Chicago; CHARLES CAIN, Midwest Mgr. for Hooker Electrochemical, Chicago; DAVE BRITTAIN, Vice Pres., Mead Pulp Sales, Chicago; WAYNE DRAPER, Hercules Pawner, Milwaukee.



LESS SERIOUS MOMENTS in a PULP & PAPER editor's summertime travels hither and yon—There are some pretty good country golfers in this group—pictures taken in different Middle Western mill towns (l to r): GEORGE BROMBACHER, The Mead Corp., Chillicothe; BILL MONSON, Hooker Electrochemical, Ni-

agara Falls, N. Y.; GEORGE MCGREGOR, Minnesota & Ontario Paper, International Falls, Minn.; TERRY HOLIERN, Powell River Co. pulp sales, Chicago; JACK DICKSON, Stowe-Woodward, Kalamazoo; JAMES VERDON, American Cyanamid, Kalamazoo; LEO WILLOUGHBY, Staley starches, Appleton, Wis.

A. D. Merrill Birthday

Albert D. Merrill, president of Chemi-pulp Process Inc., Watertown, N.Y., celebrated his 68th birthday on June 25th and recently returned from a month's tour of New England. He has long been a leader in companies serving the pulp industry and particularly, the sulfite pulping mills.

ONE HUNDREDTH ANNIVERSARY of Parsons & Whittemore, Inc., New York City, is honored by the One Hundred Year Association. KARL F. LANDEGGER (right), president of Parsons & Whittemore, is presented with plaque by CHARLES B. DELAFIELD, President of association. Parsons & Whittemore started as small wholesale paper firm in 1853 with a yearly gross that has risen from \$20,000 to more than \$40,000,000. The plaque pays tribute to company which "during 100 years . . . has conducted international trade principally in pulp, paper, graphic machinery, and pulp and paper machinery."



Sage Flies Safely But Mrs. Sage Swims to Safety

Let the "birdmen" make the most of this story!

Charles H. Sage, v.p. of Kimberly-Clark and president of Spruce Falls Power & Paper Co. Ltd., does more flying than most execs in this industry, on one or another of K-C's three private planes. But it remained for his wife, Mrs. Sage, to experience an accident—not in the air but on water!

The Sage cruiser *Sea Kit* struck a stump or log in Wolf River, near Fremont, Wis., and sank in 15 ft. of water. Mrs. Sage and four other women swam 70 ft. to shore and another woman paddled a life raft to safety. The captain and pilot stayed on top the ship till it was salvaged, pumped out and towed to a repair yard.

Natwicks Fly to Europe For Mills Tour

Albert G. "Buff" Natwick, resident manager of East Texas Pulp & Paper Co. plant under construction at Evadale, Tex., flew to Stockholm, Sweden early in August on a 3-week business trip to visit Scandinavian mills and observe processes and equipment.

Before starting his trip "Buff" told PULP & PAPER, "I also hope to catch a sardine while over there." He and Mrs. Natwick, who accompanied him, still make their home at Washougal, Wash., where the big chinook salmon and steelheads abound.

THEY FOUND TIME TO PURSUE THAT LITTLE WHITE BALL, too. Left to right: BILL GILBERT, Gilbert Paper Co., Menasha, Wis.; IRVING MCNAIR, retired former Vice Pres., The Northwest Paper Co., Cloquet, Minn., and LARRY HALLECK, Vice Pres., Kalamazoo Tank & Silo, Kalamazoo, Mich.



JOHN M. (Jack) HAYES, President of Appleton Mfg. Co., Appleton, Wis., is one of this industry's best golfers—usually finishing high in Lake States tournaments. Here are three snaps taken of him this summer. His firm makes paper tubes and cores for rolls. And he's apt to break 70 any round.



FISHIN'S GOOD IN FINLAND —Finland, Minnesota, That Is

The intrepid Walstonian in inset is C. J. (MKE) McMAHON, of Appleton, Wis., who has traveled Midwest mill circuits 10, these many years, for Appleton Woolen Mills. And—a scoop—here's a picture of his favorite fishing hole! A PULP & PAPER editor, touring Minnesota mills too, discovered he was hot on the spoor of McMahon, the Fisherman, when he reached Finland, a wide spot in Minnesota forest road near the north shore of Lake Superior. Twice a year, at least, Mr. McMahon and his wife, Mary, too, usually, fish this river. That could be Mike sampling that trout hole!



West Virginia Places New Machine On Line

Beginning of operation of a 200-ton Beloit Iron Works Fourdrinier machine, principally for bleached food container board, at Covington, Va., has brought this West Virginia Pulp and Paper mill's capacity to 650 tons of paper and board per day and has brought to near-completion a modernization program which began at the end of World War II, and has created an almost entirely new mill. The machine replaces two small units 40 years old.

The broad program resulted in mechanization of woodyard; rebuilding of pulp mills; expansion of power and recovery and rebuilding of three other machines. The new machine gives the mill six paper and three board machines. The new machine will be used principally to make heavy grades of bleached paperboard for food containers.

The machine has vacuum-pressure headbox for automatic control of the flow to a 216-inch wire, and Reliance Electric & Engineering and Westinghouse drives and electrical controls. There are a total of 350 electrical control stations built into the machine, with an ultramodern instrumentation system. The main drive is a 1900 hp steam turbine on a differential line shaft with speeds from 200 to 2000 fpm.

There are 76 dryer rolls; a J.O. Ross Engineering Co. air system and hood; Midwest Fulton drainage and Shartle Bros. broke Hydrapulper. Stock preparation, particularly for hardwoods, includes Sutherland refiners. Other equipment: Trimble stock meters; DeZurik regulators and valves; Mason-Neilan control instruments and valves; Nash Engineering Co. vacuum pumps and Ingersoll-Rand pumps; Bird Machine Co. Dirtacs and felt conditioners; Improved Machinery Inc. stock equipment, agitators and thickeners; Valley Iron roll header; and Stebbins tile linings throughout.

Operation of the old machines continued in space eventually occupied by the new, while Fourdrinier calender stacks and reel were assembled.

Alaska Mill Work Moving on Schedule

Lawson P. Turcotte, president of Ketchikan Pulp Co., and of Puget Sound Pulp & Timber Co., says work on the former's new MgO bleached sulfite high alpha pulp mill at Ward Cove, Alaska, is moving "pretty well on schedule" and the mill will be operating by June 1, 1954.

The dam has been completed for mill water supply and some power. Steel and other supplies are being shipped north by barge from Puget Sound. Logging begins in full swing in February or March to build up inventory.

First unit of the mill is to be 300 tons capacity, to be increased later to 525. American Viscose, co-owner with Puget Pulp, has contracted for most of the output for 20 years. Pulp cars will be ferried 90 miles to Prince Rupert and hauled by Canadian National to Amvisco mills in the east for the same rate as from Seattle.



FOR KETCHIKAN AND WEYERHAEUSER

SVARRE HAZELQUIST (left), Norway-born veteran Technical Director of Pulp Division, Weyerhaeuser Timber Co., in Longview, Wash., who has gone to Ketchikan Pulp Co., builders of new MgO process high alpha pulp mill at Ward Cove, near Ketchikan, Alaska, as General Superintendent. At Longview, where he was Tech Director since 1944, he was closely identified with installation and development work in connection with the first commercial MgO plant in world. Ketchikan's will be the second.

Mr. Hazelquist was born in Norway in 1905 and his parents brought him to U.S. that same year. He graduated from U. of Washington with a B.S. in Chem. Eng. in 1930. After one year with Rayonier at Port Angeles, Wash., he spent next 22 years with Weyerhaeuser, last nine as Tech. Director. He spent nine months of 1939 in Australia on loan from Weyerhaeuser to Australian Paper Mfrs. Co. ARTHUR ERICKSON (right), promoted to succeed Mr. Hazelquist as Technical Director for the Weyerhaeuser Pulp Division in Longview, where he had been Chief Chemist since 1944, and before that was a project chemist. He graduated from U. of Washington, 1937.

Scott's Second Machine For Everett Formally OK'd

Already previously published in these columns that Scott Paper Co. was planning a second big Scott-designed Beloit high speed tissue machine for its new paper mill at Everett, Wash., the Scott directors now have formally approved the additional \$12,000,000 expenditure for the No. 2 machine, its General Electric drive and other auxiliaries.

Potentially, there is ample space for more machines alongside the big Soundview Pulp division where pulp will be piped in slurry form to the adjoining paper mill on Everett's big harbor. Scott announced plans to increase sales to \$300,000,000 by 1958 and a major sales expansion program is underway in the west.

Plans Elk Falls Expansion

Now that Crown Zellerbach's absorption of Canadian Western Lumber Co. has been completed (over 92 percent of the shares had been exchanged by early August) executives are studying plans for early expansion of the Elk Falls Co.'s mill at Duncan Bay, Vancouver Island, C-Z President J. D. Zellerbach told PULP & PAPER in Vancouver, B.C.

Don Denman, vice president, heads the planning committee.

Mr. Zellerbach and Mr. Denman conferred in Vancouver with Paul Cooper, president, and other officials of Pacific Mills, Henry J. Mackin, president, and R. J. Filberg, vice president of Canadian Western, later flying with them over Canadian Western's vast timber domain on Vancouver and adjacent islands.

Official Plans For 3 Big Mills in the Amazon

Research in United States laboratories in the past six months, also in France, have led to plans for three big pulp-paper mills in Brazil—each to make "upwards of 1,000 tons daily"—which would replace annual imports of \$5,000,000 in woodpulp and sharply reduce \$30,000,000 in newsprint imports, mostly from the U. S. and Canada.

Foreign private capital is invited to participate, said Licurgo Costa, the Brazilian government's Trade Bureau chief at 551 Fifth Ave., New York City. Brazil agriculture department officials said 500,000 sq. mi. of tropical woods would be used. Mills would be at (1) Marajo Island, at mouth of the Amazon, (2) at Manaus, 1,000 miles up the Amazon, and (3) at mouth of the Madeira, Amazon tributary.

Zellerbach U.N. Delegate

J. D. Zellerbach, president of Crown Zellerbach Corp., has been appointed by President Eisenhower as one of alternate United States delegates to the United Nations.

Pulp and Paper Plans At Chicago Safety Meeting

Chairman Clark Everest of Marathon, who participated in the first National Safety Congress in Milwaukee in 1912 and was honored as a 1912 "Pioneer" last year, will discuss "40 Years Progress in Safety" before the pulp and paper section during the 41st annual Congress in Chicago Oct. 19-23.

Another feature will be addresses by an assistant superintendent from Ohio, a foreman from Louisiana and an hourly-worker from Wisconsin, each active in safety for many years.

They are Donald O. Collins, assistant superintendent, No. 1 paper mill, The Mead Corp., Chillicothe, O., where he was former assistant to the division manager; Earl D. Hargis, senior pulp tour foreman, International Paper, Bastrop, La., and Elmer Collar, hourly employee in engineering, Kimberly-Clark, Neenah, Wis.

Jimmy Arrington, veteran public speaker and Mayor and editor in Collins, Miss., is another featured speaker.

Arthur Carle, safety director, The Northwest Paper Co., Cloquet, Minn., arranged the program.

WILL EXPRESS THREE VIEWPOINTS ON SAFETY in Chicago in October (l to r): EARL D. HARGIS, Senior Pulp Tour Foreman, International Paper Co., Bastrop, La.; DONALD O. COLLINS, Asst. Supt., No. 1 Paper Mill, The Mead Corp., Chillicothe, O., and ELMER COLLAR, Hourly Employee, Engineering Dept., Kimberly-Clark Corp., Neenah, Wis.



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For many years we have provided membrane linings, protected by brick or tile, to meet special chemical conditions beyond the protective limits of the usual Stebbins tile, brick or carbon linings.

To increase the scope of this service, and to meet an even greater range of acid and alkali conditions, we have established complete shop facilities at Watertown for the application of Saran-Rubber and Tygon linings. In addition, skilled field crews are available for installing these materials anywhere in the United States and Canada.

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of Linings and
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EQUIPMENT AND SUPPLY COMPANY NEWS

COVER U.S.A. FOR BRANDON



SHOWN LEFT TO RIGHT in this picture are Sales Representatives serving under K. E. FRYFOGLE, President of Brandon Sales, Inc., Greenville, S. C., in covering the U.S.A. for Brandon Dryer Felts:

FRANK CLAWSON, new Midwest Rep., who lives at 333 Parchment Ave., Kalamazoo, Mich. He is 29, attended Ohio State and graduated from Miami U., Oxford, O., and has been with Sutherland Paper Co. and also served as a felt manufacturers' representative.

SAM T. ORTON, Jr., Northeast Rep., who is president of Orton Corp., 95 Broad St., Fitchburg, Mass., and who has had long experience in that region in serving the paper industry.

MILTON J. MAGUIRE, Pacific Coast Rep., who lives at 7831 S.W. Maple Drive, Portland, Ore., where he was former Manager for Hercules Powder Co. He retired from Hercules recently and has entered equipment and supply business on his own. Mr. FRYFOGLE will tour the Southern States mills for Brandon Sales.

KAMYR, INC., allied with Aktiebolaget Kamy of Karlstad, Sweden, has leased space for offices and engineering in Hudson Falls, N.Y., and Knut Dahl, son of the president of the Swedish company, is president of the new concern. Sales, design, and technical detail will be under the direction of Mils Klykken who has been in the U. S. several years directing the work of Kamy with **THE SANDY HILL IRON & BRASS WORKS** which manufactured Kamy equipment. **BAUER BROS. CO.**, Springfield, Ohio, has issued a bulletin describing a No. 510 single revolving disc refiner manufactured by the company for handling bulky and stringy materials as well as slush pulps. Disc diameter is 40 in. with speed ranges from 750 to 1450 rpm. Copies may be obtained by writing the company at 1706 Sheridan Ave., Springfield.

NOPCO CHEMICAL CO. is producing a Nopcote Series of polyamide-type resins for solvent and hot melt application as decorative, greaseproof, waterproof, heat-sealing, and water-vapor-proof coatings. Softening points range from 45 to 190 and the coatings are said to be resistant to strong alkalis, mild acids and hydrocarbon solvents. They may be blended with rosin and rosin derivatives, phenolic and maleic resins, cellulose nitrate and paraffin wax.

AMERICAN CYANAMID CO.'s Calco Chemical Division is to begin construction late in 1953 of a \$14 million titanium dioxide plant near Savannah, Ga., which is expected to be in production by early 1955. Calco's other titanium dioxide plants are at Piney River, Va., and Gloucester City, N.J.

GENERAL ELECTRIC CO. has issued a revised edition of its 64-page measuring

equipment catalog covering equipment for laboratory and production testing and radiation instruments. The catalog provides brief descriptions of each product and fields of application, and condensed tables of characteristics and prices. Another G-E announcement describes a complete new setup by the company for servicing of fractional and integral hp motors and generators. A bulletin describes the services provided, and lists the authorized stations in U. S. and Canada.

CHAIN BELT CO. Milwaukee, announces purchase of **SHAFFER BEARING CORP.**, Downers Grove, Ill., for the purpose of broadening markets for its power transmission products. Shafer will be a division of Chain Belt and its line of roller bearings will supplement the Chain Belt sprocket chains for conveying. R. P. Tennes, president of Shafer, remains as division mgr., and H. E. Tennes as sales manager.

FOR EQUIPMENT COMPANIES



GEORGE B. MARTIN (left) has joined **F. C. Huyck & Sons**, Rensselaer, N.Y., as Sales Representative in charge of papermakers felts and jackets. His territory will include New York State mills formerly covered by **CURTIS F. HASKINS** who will concentrate his activities in the Vermont, New Hampshire, Western Massachusetts and Hudson Valley areas of the Northeast. Mr. Martin is a graduate of New York State College of Forestry, has been with Alliance Paper Mills, Daily News Paper Corp., and Scott Paper Co., and recently General Dyestuff Corp. **GERALD R. GONYER** (right), appointed manager of the Chicago office (120 South LaSalle) for **Farrel-Birmingham Co., Inc.**, suppliers of paper making machinery equipment. He succeeds **HARRY TEMPORAL**, who retired. Mr. Gonyer has been Sales Engineer in Chicago and joined the company in Ansonia, Conn., in 1937.

B. F. PERKINS & SONS INC., Holyoke, Mass., announces appointment of **CECIL A. POTTER** as general manager. He has long been in paper machinery and textile machinery field and was previously chief engineer with Perkins for 17 years. He came from Machinery & Engineering Corp. of Westminster, Mass.

HANCHETT MFG. CO., Big Rapids, Mich., is building a new factory, warehouse and offices at Macadam & Flower St., Portland, Ore. There will be increased manufacturing facilities and complete stocks of replacements for the saw sharpening machines, mammoth knife grinders, etc., on a main Portland highway.

AMERICAN CYANAMID CO. v.p. and gen. mgr. of Calco Chemical Division,

S. C. MOODY, announces appointment of **JAMES L. NAYLOR** as manager of the dyestuff dept., Calco Chemical, Bound Brook, N.J., succeeding **J. PFISTER**, who will devote his time to New England business and special assignments.

JAMAR-OLMEN CO., engineers and builders of ventilating and air systems for pulp and paper mills, of Chicago, have engaged **PAUL GOLDNER** to serve as sales engineer in New York City office, 10 East 39th, under **GEORGE CASH**, eastern division sales manager.

LINK-BELT CO., Chicago, announces more than 500 belt conveyor idlers in 34 types, designed to meet practically every requirement, pictured and described in a new 48-page Book No. 2416, just released. Light, medium and heavy duty 20-degree troughing idlers, two styles of 45-degree idlers, flat belt, belt training, rubber cushion and the new Link-Belt variable troughing idlers are included.

AMERCOAT CORP., manufacturers of Amercoat protective coatings for industrial application, has relocated branch offices and warehouse in new and larger quarters at Houston, Texas, according to **G. E. SEIDEL**, executive vice president. They are at 6530 Supply Row.

"**PANELGRAPHS THROUGHOUT INDUSTRY**"—P1-153—is title of a new bulletin on the growing importance of graphic panels in a broad range of industrial control applications published by **Panelit, Inc.**, Chicago 40, Ill. The Panelgraph is a central control panel which utilizes visual aid techniques to present process information to the operator. It enables the operator to comprehend large masses of data, and react intuitively when required to keep the process functioning properly. It shows many recent installations.

INSUL-MASTIC REGIONAL MANAGERS

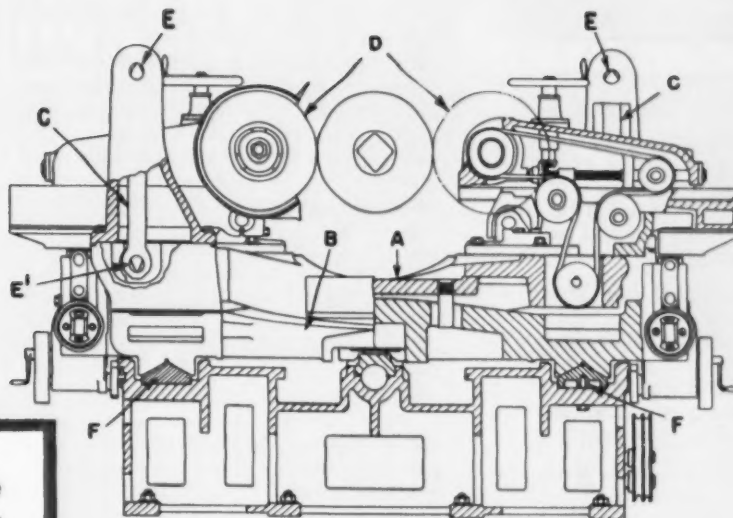


The Insul-Mastic Corp. of America has promoted two men to the position of Regional Manager.

ABNER H. BAGENSTOSE (left) has been made Eastern Regional Manager, and **JOHN J. MILLER** (right) has been placed in charge of the Midwestern territory, and will work from the home office of Insul-Mastic Corp. in Pittsburgh, Pa. They will give technical and sales assistance to contracting firms licensed to sell and apply Insul-Mastic's line of protective coatings.

Mr. Bagenstose has been with Insul-Mastic five years. He will cover states from North Carolina to Maine and westward into Ohio.

Mr. Miller, formerly an Insul-Mastic service engineer, will cover from Ohio and Kentucky westward to the Dakotas.



How the swing rest principle eliminates minor inaccuracies

The above diagram shows how the two grinding wheels are mounted in a Farrel swing-rest roll grinder.

The saddle "A" is swung by links "C" on knife edges "E" and "E'" from brackets supported on carriage "B". The grinding wheels "D" are mounted on the saddle.

Any movement of the carriage "B" imparted by inaccuracies in the ways "F" will cause a corresponding side-wise movement of the saddle supports. If the grinder were operated as a fixed-wheel machine, this would also cause an equal sidewise movement of the grinding wheels.

But in the Farrel swing-rest machine, instead of following the path of the ways, the grinding wheels follow a line parallel with the axis of the roll. Hence, the error transmitted to the roll is reduced correspondingly.

"Swing-rest" gives that EXTRA ACCURACY you need in grinding Calender Rolls

The swing-rest feature of the Farrel two-wheel roll grinder was designed to provide a greater degree of accuracy in grinding long rolls than is possible with a fixed-wheel machine.

This exclusive method of mounting the wheels offsets minor errors due to the ways being out of parallel with each other or with the axis of the roll, caused by distortions in the machine bed from seasoning, temperature changes, settling of foundation, etc. Because the swing rest eliminates the effect on roll accuracy of such conditions, the machine, when accurately set, will grind rolls to the proper straightness or uniformity of curvature, and to exact roundness.

Send for a copy of Bulletin 118, which describes in detail the many advantages of the Farrel two-wheel, swing-rest roll grinder. No cost or obligation.

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Los Angeles, Houston



FB-801

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Personals

NORTHEAST NOTES

ELMER HOLMES BARTLETT, 86, director and former vice president of Bird & Son Inc., East Walpole, Mass., died July 22. He was the oldest Bird & Son employee, starting as office boy in 1885 and was still director at his death.

ARTHUR H. COSTAIN has been appointed plant manager of the Newburgh, N.Y., paper mill of National Gypsum Co. Mr. Costain, a graduate of Kansas State College, during World War II served four years with the army in the Aleutians and has been papermaking 15 years.

DR. EDWIN C. JAHN, associate dean in charge of physical sciences and research and professor of chemistry at the State College of Forestry at Syracuse, N.Y., has returned from a European tour which included Sweden, Norway, Finland, France and Italy. He attended the 13th International Congress of Pure and Applied Chemistry in Stockholm July 29-Aug. 7 and presented three papers prepared by him, associates, and students on Cellulose.

FRANK W. YOUNG has been made assistant manager, Eastern Division, Crown Zellerbach Corp., New York City, and sales manager of industrial products of its paper mill at Carthage, N.Y. Mr. Young was district sales representative in Minneapolis. He replaces **G. S. RUNYAN** who was promoted to the company's San Francisco offices.

WILLIAM S. CALKIN, son of **JOHN B. CALKIN**, Foster D. Snell Inc., will be captain of the University of Maine track team this fall. He is a mechanical engineer major, and was recently awarded a Pulp and Paper Foundation scholarship at Maine. If he continues his interests in pulp and paper he will be following in the footsteps of his father and his grandfather, **WILLIAM S. CALKIN**, who was with P. H. Glatfelter Co., Spring Grove, Pa., almost 40 years.

DON F. GOSIN, JR., has joined the sales staff of Gould Paper Co., Lyons Falls, N.Y. Mr. Gosin has been previously for seven years with Kimberly-Clark in New York City in a similar capacity, and before that was with Publishers Paper Corp. His headquarters will be New York.

JOHN F. CLORAN, sales engineer for Bird Machine Co. in New England, except Connecticut, was written up in a recent Bird issue of "Stuff Box." It recalls he graduated from Northeastern U., served in air force CBI-Hump operations, coming out a major, and managed West Coast and Hawaiian offices of woods machinery export firm.

J. BICKNELL LOCKHART, JR., has been elected a director of Riegel Paper Corp. Mr. Lockhart is manager of the company's Warren, Riegelsville and Hughesville plants in New Jersey.

FLETCHER L. MUNGER has been appointed western sales manager for Gilman Paper Co., New York City, to succeed **E. A. KENDLER**, retired. Mr. Munger will headquarter in Chicago.

LOUIS CALDER, president of Perkins-Goodwin Co., New York City, announces that **WILLIAM H. ANDERS**, formerly a vice president and director, is rejoining the organization in those same capacities and will act as advisory consultant on sales. Mr. Anders joined Perkins-Goodwin in 1915 as a pulp salesman, and became head of the pulp department in 1922. In 1930 he became president of Nashua River Paper Co. Recently he had been general manager and vice president of St. Regis Sales Corp. in charge of the Nashua Division, until he was retired June 30.

F. A. STROVINK has been named assistant manager of the Paper Chemicals Department, Eastern Region, American Cyanamid Co. and **J. C. BARTHEL**, formerly in charge of new products development, has been named assistant technical director for the department. Both will headquarter in New York.

SOUTHERN NOTES

AUBREY T. TAYLOR, vice president and plant manager of the National Container Corp. (Virginia), Big Island, Va., has been elected a director of the Central Virginia Industries, an association of manufacturers.

C. DONALD STEINWEDEL of Bristol, Va., has joined Carpenter Steel Co., Alloy Tube Division as sales representative in North and South Carolina, Tennessee, West Virginia and Kentucky; has been with Carpenter since released from duty with the Army Engineers.

PAUL J. DUMAS has become manager of National Gypsum Co.'s new plant in New Orleans. This unit was the plant of Asbestone Corp., acquired by National Gypsum in a stock transaction. Mr. Dumas was formerly manager of the Pryor, Okla., paper mill. **FRED L. BUCHANAN**, from Kalamazoo, Mich., is new manager at Pryor.

WALTER W. HANES has become assistant to **WILLARD E. HAHN**, vice president and resident general manager of St. Regis Co.'s kraft center at Pensacola, Fla. He will deal particularly with personnel, labor and community relations.

GEORGE F. GRUSCHOW has been leader at Tidewater Research Center, Franklin, Va., under Southeastern Forest Experiment Station. He formerly was at Olustee, Fla.

FRANK STROUT is new office manager at Fernandina, Fla., for Rayonier, succeeding **BILL JOYNER**, office manager at the new mill being built in Jesup, Ga. **FRANK GIBSON** is assistant office manager at Fernandina.

M. M. "JIMMY" JAMIESON, who has been manager of Gaylord Container Corp.'s Memphis Office for the past several years, has been promoted to head newly-created General Sales Service Division. He will be located in the St. Louis general office. He graduated from Tulane University, New Orleans in 1942.

EMANUEL J. JOHNSON,
Purchasing Agent for
Southeast Area for Ray-
onier, Inc. Will base at
Jesup, Ga.



Emanuel Johnson Named Rayonier P. A. for Southeast

Emanuel J. Johnson has been appointed purchasing agent for all the Southeast area of Rayonier, Inc., according to William E. Breitenbach, production vice president. Mr. Johnson continues to oversee purchasing at the Fernandina, Fla., mill, as he has since 1937, but will headquarter at the new Southeast area offices in Jesup, Ga., where a new Rayonier mill is being built.

The single story brick offices at Jesup, between Whaley and Wayne Sts., will also be headquarters for these executives:

Joseph B. Talbird, assistant company comptroller.

Walter Thad McDaniel, head of the Southeast industrial relations division.

Buyers and procurement men of the Southeast Timber division. J. Rex Nance, head of this division, continues to base at Fernandina Beach.

Rayonier has also announced the appointment of Lowell M. McGinnis as assistant pulp mill superintendent for the Jesup mill. Mr. McGinnis is a graduate of Washington State College and moves to Jesup from his company's operations at Shelton, Wash.

HENRY VRANIAN has been appointed sales manager, of the Chesapeake Corp. of Virginia, succeeding the late **W. C. GOULDMAN**. Mr. Vranian has been with the company 19 years, as chief chemist and later as assistant gen. supt.

LOUIS L. MRACHEK, construction engineer at Kingsport, Tenn., for the past two years, has been appointed plant engineer of the Kingsport Division of the Mead Corp. He is a U. of Minnesota graduate, 1947.

KARL M. GUEST, the former plant manager at National Container Corp., Jacksonville, is named plant manager at a new Valdosta, Ga., mill being built by N.C.C.

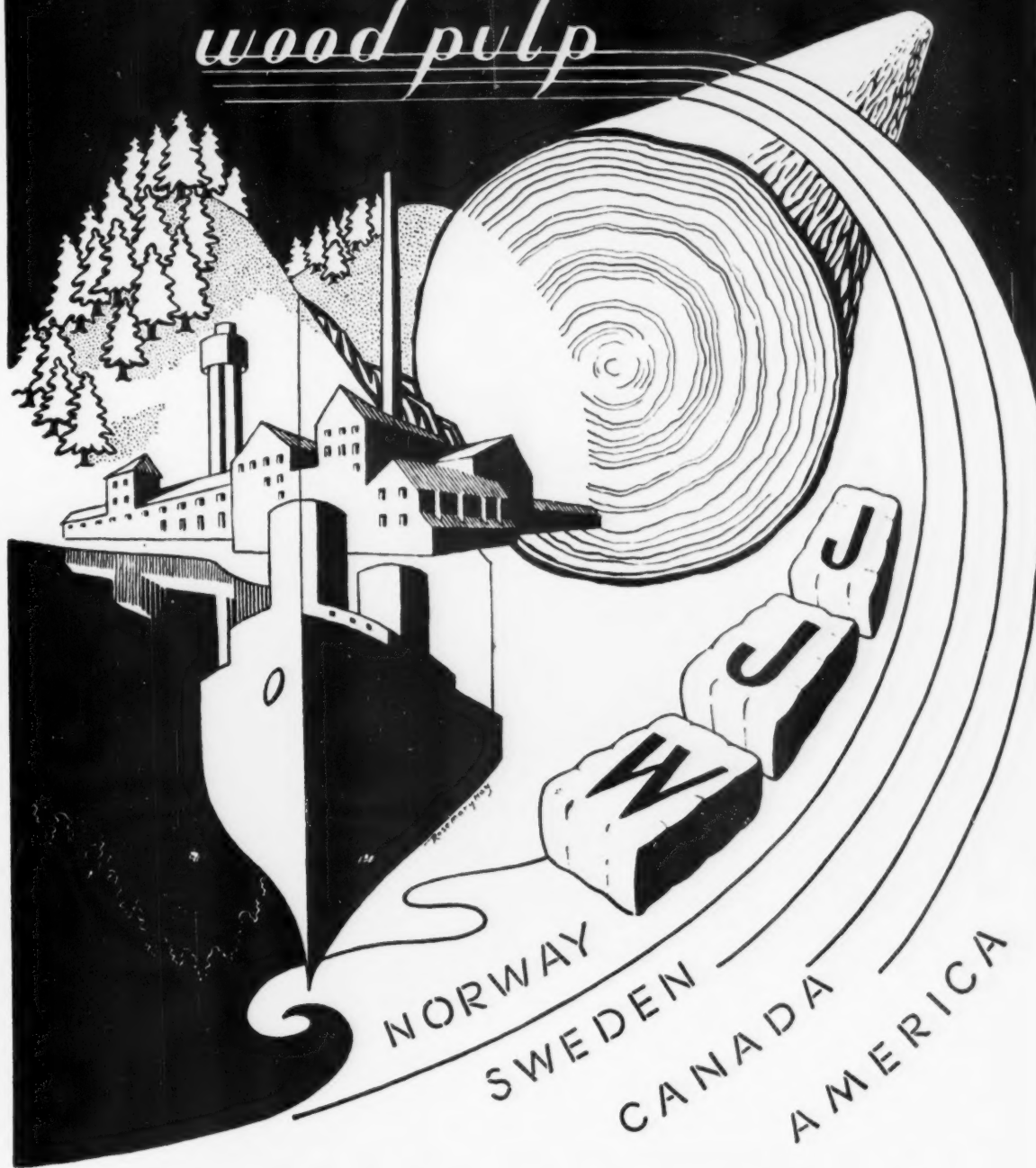
J. E. MAILHOS, former plant engineer at Jacksonville, is designated plant engineer at Valdosta. He is succeeded by **R. V. Pennington**, an engineer with the Valdosta construction organization.

H. M. BURNETTE, former maintenance superintendent at Jacksonville, is to be maintenance superintendent at Valdosta. His successor is **R. E. ADAMS**, construction engineer at Jacksonville.

WILLIAM J. MILES, former master mechanic at Jacksonville, is named master mechanic at Valdosta. His successor is **E. ANDERSON**, his assistant at Jacksonville. **R. K. FUNDERBUCK** will be assistant master mechanic at Jacksonville.

JOHNSEN JORGENSEN & WETTRE LTD.

wood pulp



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TELEGRAMS: "WETTRE, LONDON."

EDINBURGH

MANCHESTER

Personals

MIDDLE WEST NOTES

RAY RANUM, foreman in the machine room at The Northwest Paper Co., Cloquet, Minn., was recently re-elected mayor of Cloquet. He has held that position a number of years now.

MR. AND MRS. JAMES H. DAVIDSON of Minneapolis, (he is chief engineer of M & O Paper Co.), were happy to welcome their son, Joe Davidson, back from 10 months in Korea as a Pvt. 1st class. He went from Marquette U. into the army but is entering U. of Minnesota this fall.

PAUL BARTHOLOMEW, technical director at M & O Paper Co., International Falls, Minn., has moved into a new home with his family—and with his radio equipment. He is one of this industry's enthusiastic radio "hams." He vacationed this year in home town of Kalamazoo.

JOHN ROBERT CARRIVEAUX, son of E. J. ("PIDDO") CARRIVEAUX, superintendent of pulp and paper manufacturing, Fort Frances, Ont., mill of M & O Paper Co., was home recently on a vacation from his position as an engineer with the Atomic Energy Commission in Albuquerque, New Mexico.

TED FREDERICK, assistant plant engineer at Blandin Paper Co., Grand Rapids, Minn., and Mrs. Frederick recently welcomed twins to their little family, now totalling four. Ted, a 1949 U of Minnesota graduate, joined Blandin in 1951 from Paul A. Laurence Co., Minneapolis engineering firm which does considerable pulp and paper work.

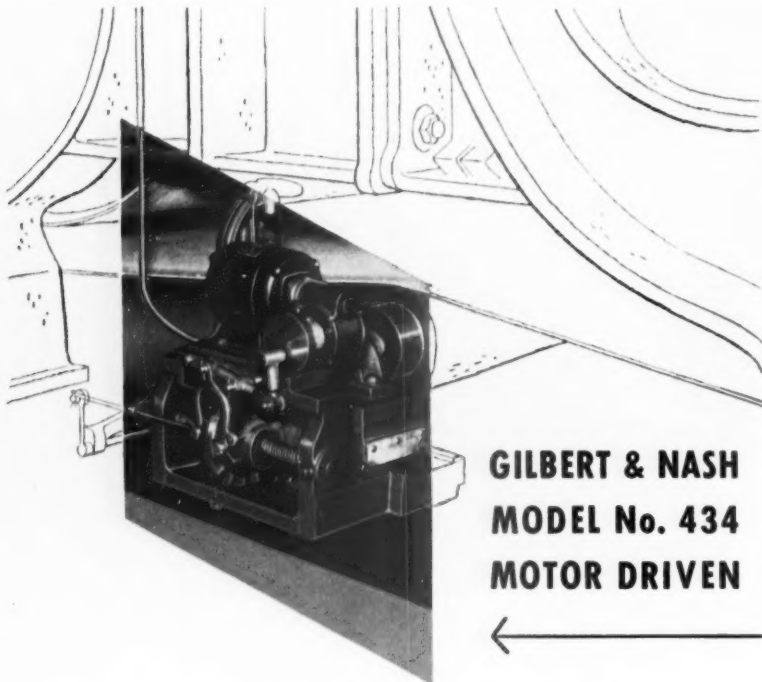
FRED G. BARBER has been appointed superintendent of the Middletown, O. carton plant of Gardner Board and Carton Co. Before coming to Gardner, Mr. Barber was plant manager of American Coating Mills carton plant at Grand Rapids, Mich. He was born in Oswego, N.Y., graduated from Syracuse.

ARTHUR S. WELLS, plant engineer for many years for Mead's Kingsport, Tenn.,

THEY ARE NOT TWINS— LEAD MICHIGAN SUPERINTENDENTS



THEY MAY LOOK LIKE TWINS IN THIS PICTURE—though not in real life—and they are not twins. They are recently elected leaders of the Michigan Superintendents Division. **LEON MIMMS** (left), of Kalamazoo Paper Co., has been elected new Chairman of the Division, and **HARRISON KINDIG** (right), of MacSimBar Co., has been elected First Vice Chairman. For the coming year he will work closely with Mr. Mimms and will head up their Kalamazoo Ladies Night party next Spring. **CLAUDE BOS** of St. Regis was elected Second Vice Chairman and **MARSHALL RUTZ** of KVP, Secretary-Treasurer. This division gives all elective jobs to mill superintendents themselves. Chairman Mimms is a native of South Carolina, started in a Philadelphia mill.



**GILBERT & NASH
MODEL No. 434
MOTOR DRIVEN**

Illustration shows special application of G & N dryer felt guide on short felt in high-grade Bond Wisconsin mill. Where hard-to-control short felts and/or limited head space are problems, Model 434 is the engineered answer.

All G & N guides are designed for the job.

GILBERT and NASH company

APPLETON, WISCONSIN

Division, has moved to the corporation's general engineering department in Chillicothe, O., as assistant to Chief Engineer C. N. MULL. Mr. Wells, native of Enaquin Falls, Maine, graduated from Cornell. His son, Stan, graduated in industrial management from Yale this year. **JOHN CARSON**, coating department foreman, has been appointed engineering assistant to the production manager at The Mead Corp. Chillicothe, O., mill. Mr. Carson graduated from Temple in 1936 and has been in Mead mills since as chemist and superintendent.

W. H. GRAEBNER, chief mill manager, Marathon Corp., has been appointed production manager of Menominee, Mich., Oswego N.Y., and Rothschild and Ashland, Wis., mills of Marathon and later will have charge of Northern Paper Mills, Green Bay, Wis., which becomes a division in November. **HAROLD SPERKA**, staff assistant to **ROY SUND**, executive v.p. of mfg., has been appointed manager of standards and graphic arts. **LEO C. HEROMAN**, parafilm plant supt., is new supervisor of Menasha and Wausau, Wis., and Sunnyside, Wash., packaging plants. **JOHN W. BARD**, Menasha mill supt., succeeded Mr. SPERKA.

FRED C. GOODWILL has left Kalamazoo to be assistant to **WILLIAM R. ADAMS**, v.p. of mfg. for St. Regis, New York, and **LEONARD A. PIERCE** has become manager of St. Regis Kalamazoo mill, where he was Mr. Goodwill's assistant.

DONALD A. SCHMIDT, from a steel mill in Cincinnati, has been named industrial engineer at Gardner Board & Carton, Middletown, O. **GEORGE E. LEIGHTON**, from an aircraft builder, has joined Gardner's operating management staff.

A. C. SUTHERLAND has moved to Appleton, Wis., and **B. F. VAUGHAN** to Kalamazoo for DuPont dyes and chemi-

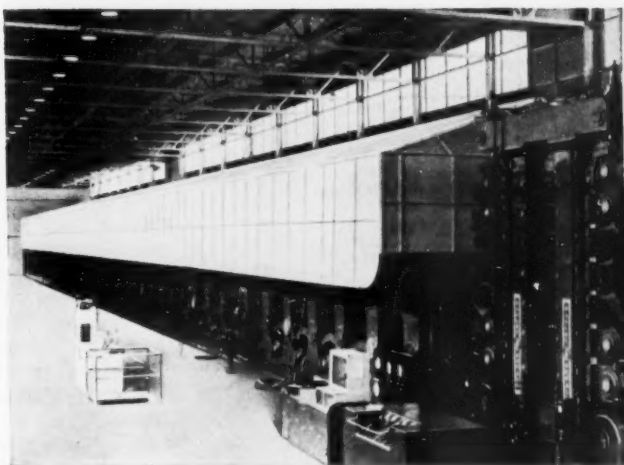
(Continued on page 82)

KRAFT CENTER—Pensacola, Fla.

is the latest of the major installations of

ROSS AIR SYSTEMS

IN 13 MILLS OF THE



ST. REGIS PAPER CO.

In one after another of its many busy mills distributed over eight states in the U.S.A. (and others in Canada), the great ST. REGIS PAPER CO. has chosen ROSS Systems for all its air handling problems. At Kraft Center in Pensacola, Fla. ROSS equipment includes:—

Machine Hood and
Exhaust
Heating and Ventilating
Vapor Absorption

Ross-Grewin System
Felt Supply System
Beater Room
Exhaust

Washer Room Ventilation
and other auxiliary systems

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- 2 CARTHAGE, NEW YORK
- 3 DEFERET, NEW YORK
- 4 EAST PEPPEREL, MASS.
- 5 HARRISVILLE, NEW YORK
- 6 HERRING, NEW YORK
- 7 KALAMAZOO, MICHIGAN
- 8 PENSACOLA, FLORIDA
- 9 SARTEL, MINN.
- 10 TACOMA, WASH.
- 11 WATERTOWN, NEW YORK
Panelite Division
- 12 KALAMAZOO, MICH.
- 13 TRENTON, NEW JERSEY



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ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

Personals

(Continued from page 80)

cals division from their Chicago offices. **RALPH J. SHEMANSKI**, former comptroller at LongLac subsidiary in Canada, has become comptroller and assistant secretary-treasurer of Kimberly-Clark, Neenah, succeeding **EDWARD DAVITT**, new financial v.p. of Cellucotton Products, Chicago.

WILLIAM M. BROADWAY of the Pigment Division of DuPont Co., based in Chicago, is starting to serve exclusively the pulp and paper trade in Wisconsin, Illinois, Minnesota and Upper Michigan. He formerly served all trades for pigments and dry colors. **HARRY SCHREIBER**, manager of all western sales for Pigment Division for 12 years, also said he plans to call on pulp and paper mills—

something he has been unable to do much of, in the past. He is a 28-year veteran with DuPont.

P. M. CHIUMINATTO, secretary-treasurer of Charmin Paper Mills, Green Bay (ex-Hoberg), has contributed a chapter on "A Practical Basis for Working Capital Management" to a book "New Business Finance Handling," published by Prentice-Hall.

HOWARD E. WHITAKER, president of The Mead Corp., has moved his offices from the Chillicothe parent mill to Mead head offices at 118 West First St., Dayton, O.

CHARLES S. REESE, 78 years old and for many years assistant superintendent of Aetna Paper Co., Dayton, O., died recently in his home town of Dayton, where he lived in retirement.

E. A. CHARLTON, an executive and consultant in the paper industry 35 years, has joined the H. K. Ferguson Co., engineers and builders, Cleveland, O.

EUGENE M. BAKER is new plant manager at Kalamazoo, for National Gypsum.

JOHN MELSEN joined the accounting department and **RICHARD J. ZEAMER** joined the engineering department of Neekoosa Edwards Paper Co. Mr. Melsen, a certified public accountant, is a graduate of the University of Wisconsin. Mr. Zeamer, a graduate of M.I.T. 1943, worked for Morton O. Tuttle Co., Boston; Bath Iron Works; and Arpin Construction Co., before joining Nepco.

WILLIAM R. HASELTON, recently appointed technical director at Rhinelander Paper Co., was winner of the Westbrook Steele gold medal when he earned his Ph.D. this year at the Institute of Paper Chemistry, where Mr. Steele is president. His award was for outstanding thesis work. His was on gas absorption of wood and gas absorption techniques in studying paper and pulp structure. He came from South Glens Falls, N.Y.

E. L. LAMB has been named assistant director of research in charge of pulp and paper for Minnesota & Ontario Paper Co. He is 47, was director of research for Oxford Paper in Maine and graduated from Syracuse in 1929. He also was with Scott.

J. W. NOLL of Munroe Falls Paper Co., Munroe Falls, O., won the memorial trophy named for the late Charles Ludwig of The Mead Corp., in the Ohio superintendents division's recent golf outing.

WALTER A. SHERMAN, assistant general manager at Kansas City Star Co., Flambeau, Wis., Div., mill, is president of the Roadbinder Association made up of men in Wisconsin mills in charge of furthering sulfite liquor use for roadbinder.

Roy Hella Manages Pulp Mfg.

Roy P. Hella now has the title of manager of pulp manufacturing at The Northwest Paper Co., Cloquet, Minn., having succeeded to that post after Mace Harris became manager of pulp and paper manufacturing for the entire operations.

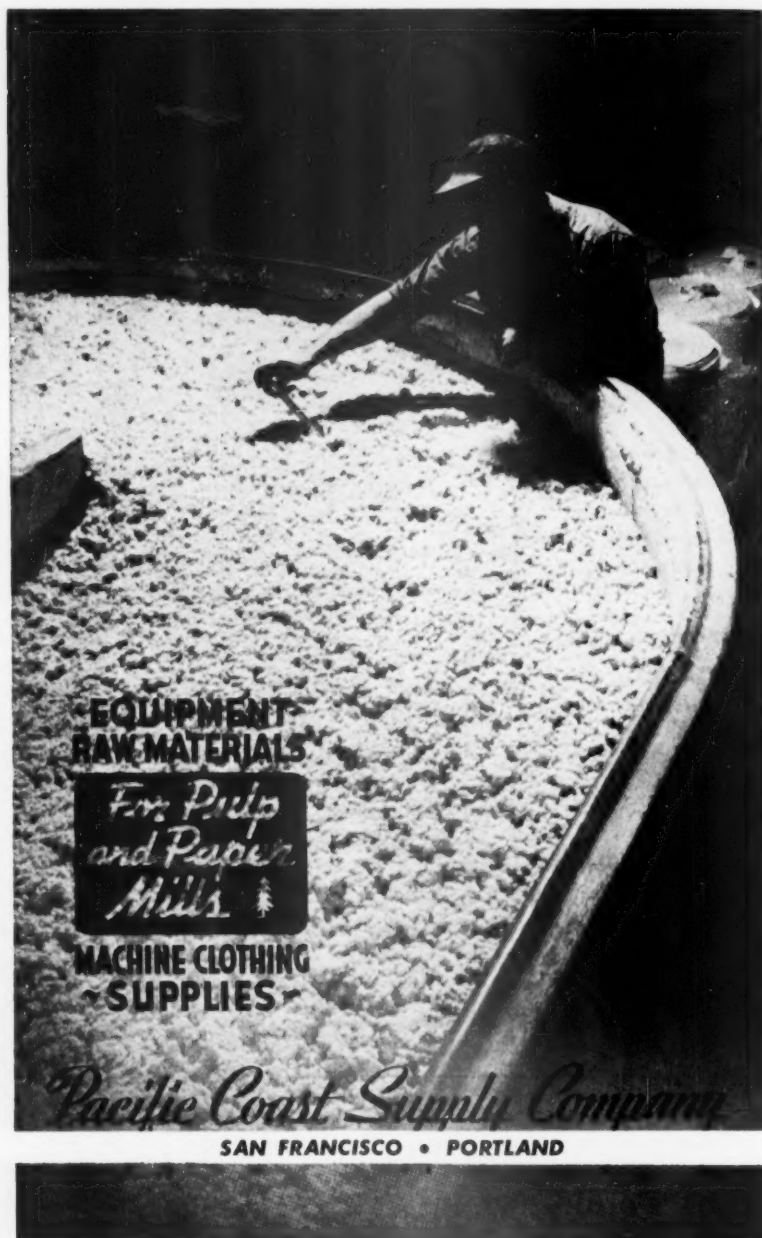
Mr. Hella first started working in the mill while in high school in the '20's and came back as development engineer after earning his bachelor of science degree at the University of Minnesota in chemical engineering.

Don Tomas Mier, Head Of Coyoacan Mills, Dies

Don Tomas Mier Garcia, president of Fabrica de Papel Coyoacan, S. A., one of Mexico's leading pulp and paper industries, died suddenly Apr. 3.

Sr. Mier was widely known and well-liked, always cordial to visitors, including a PULP & PAPER editor who gathered an article on his operations a few years ago. Coyoacan is one of the oldest cities in Mexico, just south of Mexico City. The Coyoacan mills were usually rated among Mexico's "Big Three." One of the Coyoacan machines came from a dismantled Puget Sound mill but many improvements and much expansion has been carried out.

A new subsidiary, "El Pilar," to make cane bagasse bleached pulp by the Celdecor-Pomilio process, is being completed this year, first mill of its kind in Mexico.



**EQUIPMENT
RAW MATERIALS**

*For Pulp
and Paper
Mills*

**MACHINE CLOTHING
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Pacific Coast Supply Company

SAN FRANCISCO • PORTLAND

BAGLEY & SEWALL

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*designing and building
paper making machinery*

Personals

PACIFIC COAST NOTES

IRVING T. RAU recently resigned as secretary of St. Helens Pulp & Paper Co., St. Helens, Ore., and is devoting considerable time to constructing a new home there and subdividing his 32-acre Oregon Coast beach property. He officially retires from St. Helens Pulp next Jan. 1. Subsequent to that he anticipates becoming active in the banking business—he is vice president of Bank of St. Helens.

DR. EDWIN L. LOVELL, research manager, and DR. OTTO GOLDSCHMID, research associate, both of the Research Division, Shelton, Wash., Rayonier Inc., flew to Europe in late July and were to attend international meetings in Stockholm and Uppsala, Sweden, and visit Swedish pulp mills.

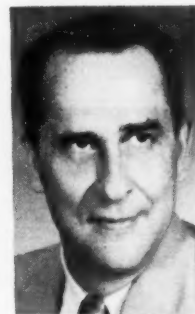
GERALD ALCORN, construction engineer for the Pulp Division, Weyerhaeuser Timber Co., has moved to his home on Cascadia Way, in Longview, Wash., with completion of the new kraft mill project at Everett, where he was temporarily living.

ALBIN (AL) NELSON, longtime mill superintendent and general superintendent of Potlatch and formerly Fernstrom Paper Mills operations at Pomona, Calif., has retired to devote his time to raising chickens. He started papermaking in Sweden 41 years ago, came to the U.S. in 1923 and first worked in Everett Pulp & Paper Co. (Wash.)

THOMAS W. CORSAN, employed at Grays Harbor Pulp & Paper, Hoquiam, Wash., since 1928, is new sales rep. for Grays Harbor (Hammermill) papers, with offices in San Francisco.

RUTH BORGLUM, secretary to pulp mill personnel office, at Weyerhaeuser's Springfield, Ore. operations, is going to the Belgian Congo as a United Christian Mission treasurer. First though, she takes

CHANGES IN C-Z ORGANIZATION



ART NEWCOMB (left), who has transferred from the Camas, Wash., Mill of Crown Zellerbach Corp., where he was a Supt. for years, to be Paper Mill Supt. of the newly acquired St. Helens Pulp & Paper Division, St. Helens, Ore.

CLARENCE BROWN (right), who has succeeded Mr. Newcomb as Paper Mill Supt., Wrapping End, in the big Camas mill.

a short course in an African language at Yale, and a year of orientation courses. FRED WUENSCHER, retired Hammermill sales manager in Hoquiam, Wash., died at nearby Aberdeen on July 21. He was 67.

JOHN HART, development engineer at Longview Fibre Co., Longview, is a city councilman. His associate, HAROLD WALL, now technical director, also was a Longview councilman.

DONALD J. TENNEY, district purchasing agent of Crown Zellerbach Corp., Portland, Ore. office, was promoted to assistant to vice pres. F. N. YOUNGMAN. In this new position he is responsible for local office personnel and retains general supervision of purchasing. R. B. TOBEY, formerly assistant, became district purchasing agent, and F. B. McLARNEY, assistant supervisor of purchases at West Linn, transferred to Portland to succeed MR. TOBEY.

MYRON SAVAGE, Rayonier, Inc., Hoquiam, Wash., has been appointed chairman of Civilian Defense Coordinating Committee, Western Division of National Forest Industries Communications.

NEW POSTS ON PACIFIC COAST



K. E. (GENE) GERTTULA (left), appointed as Sales Representative for Brown Co., in seven western states, basing at 618 Market St., San Francisco, according to announcement by EARL VAN POOL, Pacific Coast Sales Mgr. He said Mr. Gerttula, who is 34 and a graduate of Oregon State College, will specialize on sales of Nibroc Towels and gradually extend his work to sell other Brown pulp and paper products.

M. ALEX THACKARA (right), newly appointed Los Angeles District Mgr. for Mason-Neilan Regulator Co. has been with Mason-Neilan since graduation from Mass. Institute of Technology in 1939.

you're not depending
when you use a
BRAMMER
recording
consistency
control

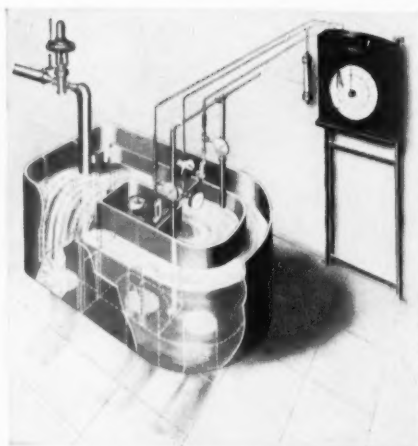
Of course, no mill operator consciously leaves his plant operation to Fate. But Fate is tempted where the element of chance in pulp and paper processing is not being constantly minimized.

The ever-rising market standards for quality products at competitive prices demand accurate control of stock consistency in the mill process.

For this reason more and more mills throughout the world are depending on the BRAMMER for proper regulation of pulp stock in varied applications.

The BRAMMER is guaranteed to regulate consistency to $\pm 1/10$ th of 1 percent. It also controls stock automatically over a wide consistency range and maintains an accurate, daily 24-hour chart on stock consistencies.

Numerous other advantages are described in Bulletin B2 which we will be glad to supply on request.



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There's a **BROWNING CRANE** *Designed for Your job!*

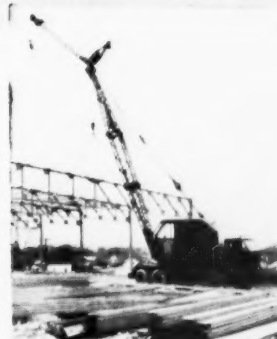
BROWNING'S
are Star
Performers
on these jobs



CAR LOADING



MAINTENANCE-OF-WAY WORK



STEEL ERECTING



Doing its own car switching, this 30-Ton diesel-powered Browning Locomotive Crane with exclusive Browning TorQflo drive does a smooth, fast job day after day loading pulpwood with a wood grapple at a large West Virginia pulp mill.



SCRAP HANDLING & SWITCHING

TEN basic models for heavy-materials handling with almost unlimited combinations of capacities, booms and equipment enable Browning to deliver a crane exactly suited to your needs. This wide selection assures you the right type of crane with ample power and capacity for your job. It also eliminates the necessity of over-investment in a crane larger than you need.

Brownings are the star performers of the power-crane industry . . . that's why crane men everywhere will tell you "You can't go wrong with a Browning on the job."

Write for complete specifications on the Browning model designed for your job.

WAGON CRANES
2 Models
17½ to 25 Tons
25 to 100 Ft.
Booms



TRUCK CRANES
5 Models
8 to 30 Tons
25 to 120 Ft.
Booms



LOCOMOTIVE CRANES
3 Models
25 to 50 Tons
50 to 135 Ft.
Booms



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BROWNING
LOCOMOTIVE, WAGON
TRUCK AND CRAWLER *Cranes*

Personals

JAMES C. BETTY was moving to Portland, Ore., in early September from Chicago offices of DuPont Co., to open a Northwest office for the DuPont Pigment Division and will call on pulp and paper mills and other customers. Van Waters & Rogers formerly represented this division in the Northwest.

KENNETH CHAPMAN and **DENNY AXON**, both shift superintendents of Pulp Division Weyerhaeuser Timber Co., Longview, Wash., have transferred in grade to the company's Everett operations. **WARREN ARNOLD**, bleach plant operator, and **RALPH GRANT**, project chemist, were named shift superintendents filling the Longview vacancies.

RICHARD D. HOWELL, C-Z, West Linn, Ore., has been promoted from beater engineer to assistant beater foreman; **JAMES SWAN**, inspector in technical de-

partment of this mill, has become technical assistant to beater foreman.

DR. WALTER F. HOLZER, formerly assistant director of research, C-Z Central Research Department and recently promoted to assistant to the manufacturing vice president, has sold his home in Camas, Wash. and bought another at Hillsborough, Calif., in the San Francisco area. He, accompanied by his family, left early in July for Europe for a vacation and to attend Stockholm meetings.

GEORGE OSTENSON, 62, Port Angeles, Wash., a papermaker since 1908, died July 25. He worked at Camas until 1917, and at Crown Z, Port Angeles since 1920, as No. 3 machine tender for the past 25 years. Survivors include his widow, Dona; a daughter, sister, and two brothers Gus and John Ostenson, of Camas.

F. T. BOWLES, C-Z headquarters purchasing agent, San Francisco, Calif., has been elected a director of Purchasing Agents Assn. of Northern California for 1953-54.

NEW DUTIES IN THE FAR WEST



C. W. (HAP) FELT (left), who has been appointed Sales Representative for Appleton Woolen Mills, of Appleton, Wisc., on Pacific Coast, according to Karl A. Obberich, Sales Manager. Mr. Felt lives in Seattle and has been active in machine clothing sales and service for a number of years. He succeeds Jack E. Johnson, of Oswego, Calif., who has retired after 12 years with Appleton, serving Wash., Ore., Calif. and Idaho mills.

JAMES G. BALDWIN (right), appointed District Sales Mgr. for Pennsylvania Salt Co. of Washington in the Los Angeles area, according to LeRoy M. Shanahan, Heavy Chemicals Sales Mgr. of Portland, Ore. Mr. Baldwin, who has been with Pennsalt since 1948, will make his home in Pasadena, Calif.

C. L. DILLING, resident manager, Western Waxed Paper Co. division of C-Z Corp., San Leandro, Calif., has been elected president of the city's Rotary Club.

DR. W. W. MOYER, research director of C-Z Corp., announced addition of personnel in central research department at Camas, Wash. as follows: **DR. GORDON MURDOCK**, who obtained PhD in physical chemistry at U. of Oregon, came with paper products development; **DR. JAMES F. CORMACK**, PhD in chemical engineering at Oregon State, joined chemical research; and **RICHARD F. LAPORE**, to receive PhD in organic chemistry at OSC, was to join chemical research soon.

MORRIS RIVERS, steam plant staff engineer, was assigned supervisory duties, and **ARTHUR EYMER**, formerly No. 3 machine tender, promoted to shift foreman, paper machines, tissue end, both at Crown Z, Camas.

MARGARET JANE NEWCOMB, daughter of Mr. and Mrs. **ARTHUR NEWCOMB**—for years superintendent at Camas, and recently made superintendent at C-Z's St. Helens Pulp & Paper Co.—was married to **EVERETT DEVLIN** July 18 at her parent's Camas home.

LUDWIG FRANK, 79-year old retired C-Z Corp. ex-credit supervisor of headquarters offices, died July 21 at San Francisco.

HAROLD R. WILKINSON, has been promoted to master mechanic of the Crown Zellerbach paper mill at Carthage, N. Y. He was engineer-draftsman at the mill.

A. M. BROOKS, formerly manager of Pope & Talbot, Inc., Oakridge, Ore., has been named timber manager of Ketchikan Pulp & Paper Co., Ketchikan, Alas. **EARL SHIPLEY**, also from Oakridge P & T, has gone to Alaska as logging superintendent of Ketchikan Pulp.

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For the building of
modern paper mills,
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During the past 16 years,
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American Israeli Paper Mills, Ltd.	Madera, Israel
B.F.D. Company	Ogdensburg and Plattsburg, New York
Bedford Pulp & Paper Company, Inc.	Big Island, Virginia
Camp Manufacturing Company	Franklin, Virginia
Champion Paper & Fibre Company	Pasadena, Texas
Container Corporation of America	Fernandina, Florida
Dexter Sulphite Pulp & Paper Company	Dexter, New York
Hudson Pulp & Paper Corporation	Palatka, Florida
National Container Corporation	Jacksonville, Florida
	Valdosta, Georgia
St. Joe Paper Company	Port St. Joe, Florida
St. Regis Paper Company	Eastport, Florida
	Cantonment, Florida
Southland Paper Mills, Inc.	Lufkin, Texas
Tasman Pulp & Paper Co., Ltd.	Tawerau, New Zealand
Union Bag & Paper Corporation	Savannah, Georgia

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September 1953

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Personals

CANADIAN NOTES

JULIUS OROSY, Hungarian-born machinist at Ontario-Minnesota Pulp & Paper's Kenora, Ont., mill, has an unusual hobby—collecting all kinds of unusual musical instruments from all over Canada. He plays some. He made a lampshade from an antique clarinet.

JOHN ASHBY, resident manager of Westminster Paper Co. for several years at New Westminster, B. C., has been elected a vice-president.

C. B. DAVIES has been appointed manager of Irving Pulp & Paper Ltd. at Lancaster, N. B. He was formerly with the E. B. Eddy Co. and Manitoba Paper Co.

New treasurer of Abitibi Power & Paper Co. is **W. S. ROTHWELL**, who succeeds **HOWARD YOUNG**, the latter retiring after many years' service.

ARTHUR J. EDWARD, Superintendent, Control Department, Canadian International Paper Co., Three Rivers, Que., passed away on May 3. Mr. Edward has been a member of The American Pulp and Paper Mill Supts. Assn. since 1930.

C. L. TOMLINSON, for three years technical assistant to the pulp production manager of Howard Smith Paper Mills, Cornwall, Ont., division, has been spending two months in Scandinavia on a scholarship. **JACK S. GILHAM** has been appointed manager of the Crabtree Mills division of Howard Smith Paper Mills, succeeding **LORNE CRABTREE**. He has been with that company since Kinleith Paper Co., which he joined in 1919, was taken over. **J. E. BOUCHER**, another Crabtree Mills veteran, has been named assistant mill manager.

LESLIE PALMER, vice president and mill manager, Donnacona Paper Co., Que., announces that **TOM SHEPHERD** has been made groundwood superintendent; **TOM DOBSON**, chief chemist, and **ROBERT MAEDER**, control superintendent.

New manager of Thorold, Ont., mill of Provincial Paper is **DR. GORDON I. HOOVER**, who continues as technical director, but relinquished duties as manager of the coating mill at Georgetown, Ont., where **D. R. DUNCAN** has been appointed general superintendent.

R. R. HOLMES, formerly resident manager for Abitibi Power & Paper Co. at Smooth Rock Falls, Ont., has been made resident engineer of Provincial at Thorold.

PETER J. VAKOMIES, has become associated with Sandwell & Co., consulting engineers of Vancouver, B. C., specializing in wood chemical engineering, in which he graduated in 1946 from Finland Institute of Technology. Mr. Vakomies was a captain in the Finnish army 1939-44, was kraft mill superintendent for Sunila Co. in Finland and the past two years was at Irving Pulp & Paper.

WILLIAM A. BAIN, chief engineer of Alaska Pine & Cellulose and previously an engineer for B. C. Pulp & Paper Co., has been appointed manager of the cellulose division, Alaska Pine, Vancouver, B. C. He succeeds **LES CLEMINSON**, named manager of new developments for Abitibi Power & Paper Co. in Toronto.

HOWARD R. WRIGHT, formerly project manager at Ocean Falls, B. C., for Pacific Mills, and for the past five years representing C. C. Moore & Co. in Vancouver, has been appointed chief engineer, cellulose division, Alaska Pine, succeeding Mr. Bain. **EUGENE DE LUCA**, who recently joined the organization, is assistant manager.

ANTHONY BENN, vice chairman and managing director, Price & Pierce, Ltd., London, and **Dr. JOHN S. BATES**, formerly director of company operations in Canada, visited British Columbia during the summer.

JAPAN'S ALASKA PLAN

(Continued from page 32)

based primarily on the question of continental defense. Should these North American timber resources be preserved for defense, in view of the use of wood pulp of the type that can be made effectively in Alaska for explosives or smokeless powder to fire guns? And paper and paperboard products, too, are critical items for defense.

The Forest Service has calculated there is enough timber for six or seven mills in Alaska, operating on a perpetual yield basis. These are their so-called "pulpwood sale allotments." If one allotment—even the smallest one in the Sitka area—was lost forever to a foreign country, it could become a grave situation when the day comes—as many expect it will—when Americans will ask: "Where do we go next for more pulpwood?" Population increases alone are steadily pushing up the annual consumption rate, and new uses for pulp are, also.

These fears and these arguments may lend support to the authoritative view that any Japanese contract for the timber should, and perhaps, would be restricted to a time limit, say, 25 years.

Japan's Effort To Get Alaska Wood Started in '51

Japanese efforts to ease its timber problems in Alaska go back to 1951, when groups and individuals approached the U. S. Forest Service. Their proposals for outright purchase of Alaska timber and to offer Japanese labor were both turned down "as contrary to established U. S. policy which aimed at using national timber resources to develop Alaskan industry and population."

In Feb. 1952, the Japanese government petitioned the Supreme Commander of the Allied Powers for softwood timber from the Alaska national forests and for permission to send Japanese workers to harvest it. The request pointed to Japan's heavy requirements for pulp, for home construction, for Korea supplies, etc.

Before an answer was given to the Japanese, careful consideration was given to the proposal by the Departments of Defense, Interior, Agriculture, Labor, Commerce and State. The Japanese were advised that export of logs from Alaska, even to continental United States, is prohibited under an Act of Congress dating back to June 4, 1897, and that Japanese industries should not expect to obtain any softwood logs (even in form of Jap "squares") from Alaska national forests. They were told the possibility of use of Japanese labor was virtually nonexistent.

Next was the political mission to Washington of last October, mentioned in the preceding article and Commerce Department letter. An official said that Japanese mission was told by the U. S. government that "any new enterprise for obtaining forest products from Alaska must be fitted into established Forest Service timber sales policies; i.e., to build up the cut of the Tongass National Forest to sus-

tained yield cutting capacity and to support the economic development of the territory."

Also, that primary processing of the timber would have to take place in the territory and the enterprise would have to be an American corporation and would have to bid for the timber in auction sale against any possible competitors and conform to all application laws, contract terms etc.

In addition to discussions with the U. S. Government, members of this Japanese mission also carried on extensive conversations with private American financial, legal and industrial groups. The mission was headed by Junichiro Kobayashi, director general of the Council of Japanese Forest resources.

That it made a hopeful report on its return to Tokyo is indicated because a technical mission to Alaska followed in January 1953. Half of its members also stopped in Canada and Pacific Northwest states to talk over their needs with industries there.

The U. S. Forest Service also outlined to both missions the conditions under which Alaska timber could be sold.

AT DODGE MFG. CO.'S 75TH



JOSEPH E. OTIS JR. (right), President of Dodge Mfg. Corp., accepts a plaque commending company for achievements and civic contributions from the City of Mishawaka, Ind., on the occasion of the company's 75th anniversary. Mayor **E. SPENCER WALTON** (left), is presenting the plaque.

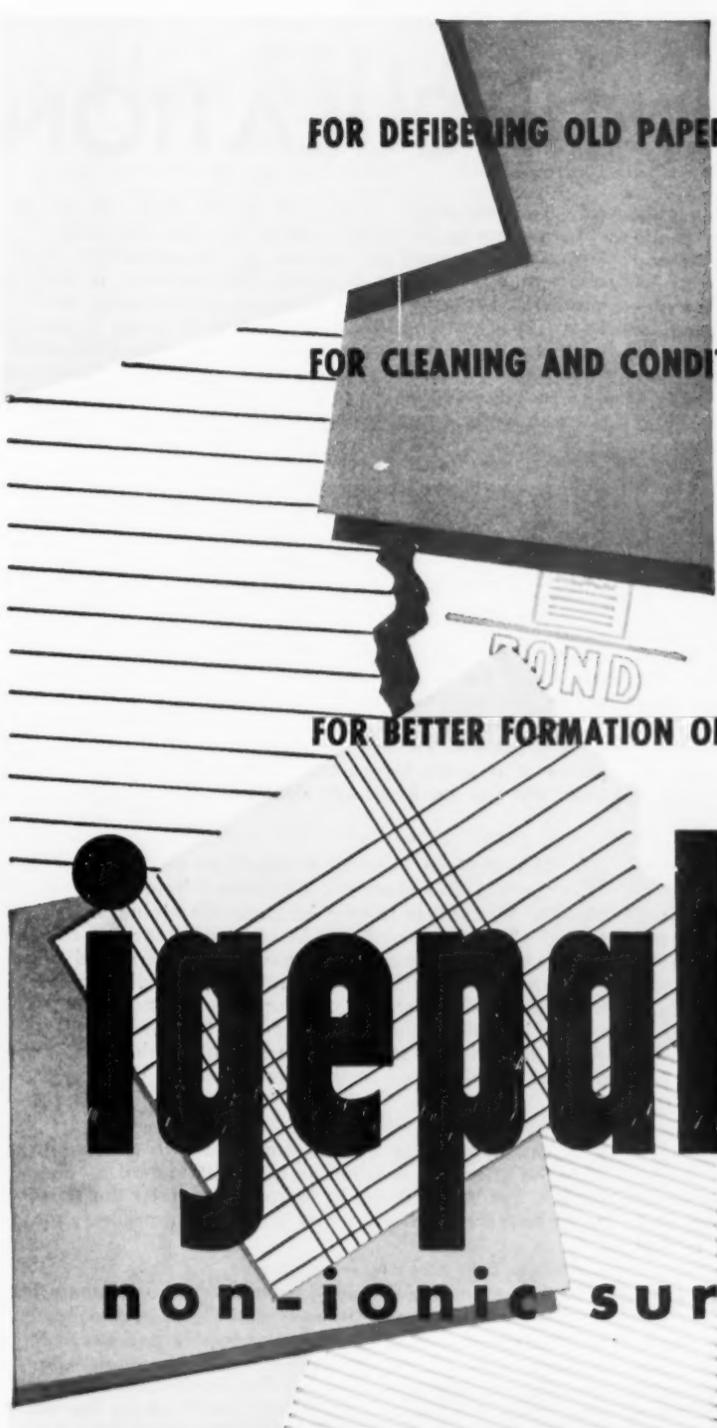
Dodge Mfg. Holds 75th Anniversary Events

Dodge Manufacturing Corp. Mishawaka, Ind., manufacturer of power transmission machinery, has launched its fourth quarter-century of service to industry following a series of community and plant events commemorating its 75th anniversary.

More than 3,200 guests took guided tours, were served refreshments in a colorful plant courtyard setting and received souvenirs.

In 1939 Joseph E. Otis, Jr., former head of Stewart-Warner Corp., became Dodge's fourth president, in which capacity he is still active.

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DIGESTER CIRCULATION

¶ The movement or circulation of the liquid in a pulp digester during the conversion of wood into sulphite pulp has always been a prominent feature of any study of the pulping operation. The huge mass of material involved, the large variation in the size of the digesting vessels, and the inherent characteristics of the chemical employed have introduced considerable divergence of opinion as to the relative importance of the several factors which play a part in the operation. It is not surprising, therefore, that differences in procedure are common and variations in the ultimate product must result.

¶ The lack of fundamental knowledge of the specific changes which take place during the cooking or digesting process proved a natural obstacle to the production of a uniform product as well as the duplication of pulp characteristics. This lack was, and still is, quite true in the case of certain basic chemical phases of the process. It was well known, however, that certain physical factors such as temperature were of inherent importance to the process. This resulted in the principal effort being devoted to the manipulation of such factors to suit the particular conditions or limitations imposed upon the individual plant. The methods used for meeting these situations did, therefore, vary somewhat with each plant or operator and a wide range of method or opinions as to the proper or most efficient procedure was a natural result.

¶ The course of natural progress quite clearly indicated an obvious need for a more specific knowledge of the process. Numerous improvements and developments in the paper-making and other related pulp consuming processes took place with the passing of time. These changes clearly indicated a need for, not alone an improvement in many of the pulp characteristics, but a still greater necessity for the maintenance of a uniform pulp character. The divergence of pulp to use other than paper-making still further indicated the need for a better understanding of the conditions under which the pulp was produced. Further, and in many instances the most important factor, many pulp mills operating on marginal wood supplies or so located that the operation was highly competitive and costly, were obliged to make improvements as a matter of survival.

¶ The need for better pulping operations was made evident to the Sulphite Staff of the Kimberly-Clark Corporation during the early nineteen-twenties. Several years of investigation and study followed. The results were a very comprehensive knowledge of the physical and mechanical factors which are essential to efficient sulphite pulp manufacture and the development of suitable equipment to maintain this efficiency.

¶ The initial phases of the study consisted of an investigation of the conventional direct cooking process. Virtually all of the effort was spent on plant size equipment since it was well known that results on a laboratory scale were not always applicable to the size used in the plant.

¶ The uniformity of the pulp produced by the six digesters in the plant used as a basis for study was first carefully analyzed relative to the conditions under which the wood was digested. The variation in quality characteristics was about the same as would be experienced in any normal mill. The spread or range in quality was such that it became advisable to investigate the cause. Examination of the conventional data such as temperature and pressure curves, wood, etc., yielded clues which were too frequently unassociated with results.

¶ It was only natural that the initial emphasis was placed upon the temperature factor. Through the medium of steam flow meters and a manifold device consisting of a series of ports or pipes leading from the steam main to the digester steaming lines, uniform quantities of heat were added. An important piece of information was obtained from this part of the study. This was that the addition of a given quantity of heat to a uniform charge of wood did not necessarily provide a specific temperature at the conventional observation points, and the resultant pulp qualities could not be correlated to the divergence in temperature. Further study indicated that the maintenance of a given temperature schedule at some specific point did not represent any definite steam quantity.

¶ The obvious conclusion was that conditions within the digester were not duplicated from one cook or digester to another merely because the steam was controlled either in quantity or in such a manner as to produce a certain temperature at some pre-determined stage. To amplify, this conclusion means that the distribution of heat in the digester is not a function of quantity control nor is it specifically related to the temperature at any single or series of points when steam is admitted in the manner usually used in the direct cooking process.

¶ The importance of temperature as an accelerant to the chemical reaction is too well known to discuss further, but if variations in temperature exist the reasons for or cause of non-uniformity in pulp becomes very plain.

¶ For some time the study was centered upon the problem of distribution of heat and the factors which affect the distribution. To do this thoroughly and accurately, several series of thermocouples and thermometers were placed in the digester to permit the simultaneous observation of the temperature at various points along the walls and in the center of the digester. The arrangement was such that sixty or more points or locations could be studied simultaneously. From the data, not only were the factors affecting heat distribution determined, but the need for improvement in distribution became very clear.

¶ It has long been recognized that the general path of the circulating currents is upward in the center and down at the sides. These currents are essential to the process since in a conventional direct cook this is the only means for carrying the heat to all parts of the mass.

in the SULPHITE PROCESS

¶ The areas involved and the velocity of these circulation currents is obviously influenced by such factors as acid concentration, rate of steaming, density of wood mass, etc., and no common terms can be used to express the magnitude of the areas or velocities. Only one point became evident. The digester can be divided into three roughly outlined and overlapping zones. These are a high temperature central core, an area of medium temperature at the top where the flow reverses from a rising to a falling current, and a low temperature zone near the bottom. Instances of divergence from the above were frequently noted but the three zone picture is the general rule.

¶ Through the medium of sample pots placed at various points in the digester, with analyses of the temperature at these points, data was obtained to show the influence of temperature and heat distribution on the pulp produced in the various parts of the digester. The correlation of the quality data with the temperatures clearly indicated that the wood in the high temperature zone was badly overcooked, in the medium temperature zone but slightly overcooked, and in the zone of lowest temperature a raw undercooked pulp resulted. This merely established more firmly the serious effect of poor distribution of temperature within the digester.

¶ The pulp sample data accounted for a feature not fully explained until the study was quite well advanced. This was the extremely wide variation in pulp characteristics which was found in samples from the blow line taken at short intervals during the blowing of the digester. These variations were within the range of the samples from the pots already mentioned within the digester and since they followed a general pattern during the blowing, the manner in which the digester emptied could be crudely but generally ascertained.

¶ The final proof of the need for uniformity of heat distribution was merely an amplification of sampling data previously covered. When an arrangement was finally developed in which uniformity of distribution was provided, the application of the temperature schedules obtained in the various zones resulted in pulp showing great differences. For example, the application of the temperatures prevailing in the central core to a digester with proper heat distribution resulted in a pulp which was cooked to the desired average in five hours or less. The medium zone temperature schedule would produce normal pulp in ten hours, and the schedule prevailing in the coldest portion would require fourteen hours or more to reduce the wood to the average pulp.

¶ All of this very positively indicates that any direct cook produces a pulp mass consisting of an aggregate of a range of qualities rather than a mass having a given character.

¶ The next step was obviously that of providing the conditions which lead to the maximum in uniformity. Many manipulative features were tried and effects studied. Certain methods of manipulation of steam, etc., did show marked advantages, but in no case were any found that might be called a sensible solution to the problem.

¶ The reason for this is very apparent. The movement of liquor is the sole means for heating the mass in a direct cook digester and, since the movement occurs only when the liquor density is reduced by heat, thus invoking rising convection currents and since supersaturation of the sulphurous acid, brought about by heat, results in rising gas bubbles, overheating of a portion of the digester is essential to any movement or circulation. Temperature differences are thus essential to distribution of heat, and with non-uniform pulping rates resulting from the necessary variation in temperature, a variable pulping rate and pulp quality is a basic part of the direct-cook.

*The next issue of this magazine will complete this description
of the Chemipulp-KC digester circulation systems*



This article is the fifth of a series being published by Chemipulp Process Inc. in PULP & PAPER magazine in the interest of generally improving the sulphite process. Correspondence regarding or discussing the articles will be welcomed.

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Winner this month is S. V. Sergeant, a "repeater," of Bowater's Thames Paper

Mills Ltd., in Gravesend, England, and secretary of the British "Tappi." It follows:

By S. V. Sergeant

THE CINEMA HAS BEEN held responsible for a good many things in the course of its comparatively short life including juvenile delinquency, increase in adult crime, and making women and girls copy the fads and fashions of film stars. Never, so far as I know, has it been possible to ascribe the ups and downs of a paper mill to the influence of the silver screen—at least, not until today. This is the way it happened.

The chemist at the mill was a keen movie fan and went regularly to the picture house at 6:50

every Monday night, irrespective of the program being shown. He had a catholic taste and so long as he was able to spend three hours every week studying the technique of the producer and the art of the actor he was quite happy. Well, some time ago he happened to see "The Man in the White Suit," the film that tells how a textile technician discovered a new material that when made up into clothing never wore out and never got dirty. Immense repercussions in the trade, both from the commercial and the labor sides, were threatening when to the technician's dismay (and eventual relief) he found that after a time the material disintegrated and fell to dust.

Seeing this film gave the paper mill chemist a bright idea. Why not develop a fiber suitable for papermaking that would break up and disappear after a given time? Just imagine how trade would be stimulated! Every so often books and papers would have to be replaced; there need be no waste paper to litter the house, the street or the park, and used tickets would not flutter around every bus stop and make the place untidy. The more he thought of it the better he liked the idea.

Next day he spent most of his time in the technical library to check on possible ways to make a disappearing fiber and as luck would have it he stumbled fairly quickly on the notes of some experiments on cellulose carried out as long ago as 1865 in which the author reported that he had tried to convert some pure cotton fiber into another form of cellulose but had failed miserably in the attempt, only a very small yield being obtained. But this was just what our friend was after. The cotton cellulose had obviously been destroyed in the experiment, and so by suitable adjustment of conditions that the author had described, the chemist hoped to produce the fiber of limited life that he required.

Blessed with phenomenal good fortune, he got what he wanted within a week. The fiber could be made from chemical woodpulp by quite a simple process and was so sensitive that it was necessary only to tear a sheet containing it for a chain-reaction to take place causing the paper to disappear within a time depending on the proportion of the special fiber present.

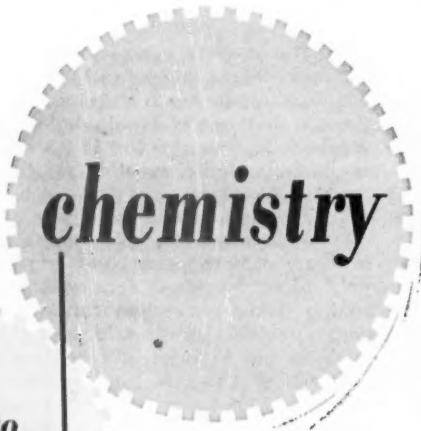
The chemist carried out several trials, including accelerated aging tests in the laboratory, and after his tests were completed he decided to see his mill manager about the possibility of launching his invention on the large scale. The manager was a little dubious at first, but eventually the prospect of pioneering this impermanent paper stifled his prejudices, particularly as the main products of the mill were paper for bus tickets, newspapers, M. G. posters and cheap wrappers, all of which had only a passing existence. He happened, too, to be chairman of the local anti-litter society who were anxious to clean up the streets and open spaces of the town and he saw how this disintegratable paper would help on his pet schemes. After a few trial makings to confirm the planned limited life that could be given to paper, the manager gave instructions for a batch of M.G. poster paper to be manufactured, incorporating enough of the specially heated fiber to give a reaction time, after tearing, of three minutes. A month later the paper had been delivered to the printers and within a week the posters were on the hoardings.

Day after day, on their way to the mill, the manager and the chemist kept a close watch on them, and one morning they were just in time to see a billposter set up his ladder ready to strip the hoardings to make space for new posters. They watched the man intently as he started to scrape at one corner of a large 16-sheet poster. No sooner were the three minutes up when—pouf! the whole poster disappeared, leaving the billposter dumbfounded and scared out of his wits.


The success of this practical test went to the manager's head and he resolved there and then to dope all his mill's products with the treated fiber. He visualized himself as a hero in the eyes of his fellow anti-litter enthusiasts and even envisaged a knighthood in the New Year's honors list as a reward for eliminating the curse of litter from town and country. To safeguard the paper against premature disintegration however, he worked out, with the chemist, a schedule of reaction times suited to the various grades.

For example, newsprint would last six hours


(Continued on page 108)



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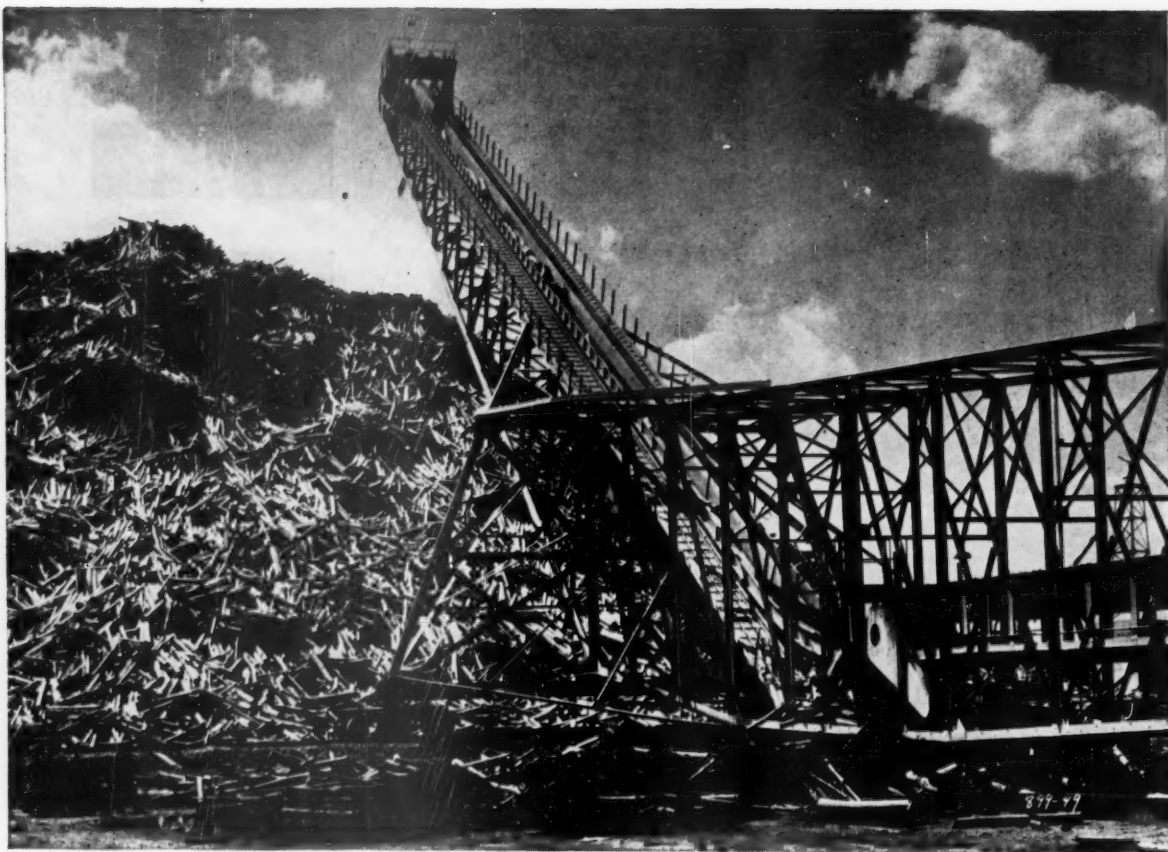
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Pulpwood section

BATTLE BUDWORM IN BOTH EAST AND WEST

THE BATTLE AGAINST the spruce budworm was waged again this year from airplanes in Oregon state in the Far West and in New Brunswick province on the east coast.

In New Brunswick more than 1,500,000 acres were sprayed with DDT solution. In Oregon the same chemical was used over 362,000 acres. It was the fifth year of the "war" in the west; the second year for east Canadian operations.

Meanwhile a PULP & PAPER editor traveling in Ontario learned no such efforts have yet been taken in that area to check an infestation in that province which is one of the worst on the continent. Another bad one is in national forests in Montana.

The campaign of New Brunswick's pulpwood owners was continued with apparently good results, with a fleet of 77 planes.

The 1,500,000 acres were sprayed with 1,100,000 gallons of DDT solution and Vernon E. Johnson, head of Canadian International Paper Co. and president of Forest Protection, Ltd., is confident that the results will be of far-reaching significance.

Forest Protection, Ltd., represents an alliance against the common enemy on the

E. L. KOLBE, Chief Forester, Western Pine Assn., and Chairman of Oregon's Committee for Budworm Battle — "Losses would otherwise have been terrific."



part of C.I.P., Bathurst Power & Paper Co., Fraser Companies, Irving Pulp & Paper Co., and the New Brunswick and Canadian governments.

About 55 planes used in New Brunswick were supplied by Central Aircraft, Inc., of Yakima, Wash., an old hand at forest and orchard spraying on the Pacific Coast.

"The spraying was aimed at saving trees rather than stopping an insect epidemic," explained Mr. Johnson. "It is believed that an outbreak of the budworm as violent and as extensive as the current one cannot be stopped by spraying alone. However, we are able to report that in the 300 square mile area sprayed last year in Restigouche county and sprayed again lightly this year, the trees seem to have regained much of their former vigor and carry the 1953 growth. The 1952 operation proved beyond

doubt that we can kill the insect over large forest areas. By spraying in successive years we may save the new, life-giving needles which the budworm devours in the spring."

Unless natural factors suddenly check the insect's progress, the battle will be resumed next year.

This year, the Pacific Northwest treatment, wholly confined to Oregon, covers 362,000 acres, mostly U.S. forests. Spray application started early in July, a month later than previously because of an unusually late spring which retarded development of the tree-killing insects.

Spruce budworm spraying has been carried on each year in the Northwest since 1949 as follows: 267,000 acres in '49; 933,000 acres in '50; 927,000 acres in '51; and 665,000 acres in 1952. All was in Oregon except for a total of 656,000 acres in Washington covered during 1950-52 three-year period.

E. L. Kolbe, chairman of the Oregon forest pest action committee and chief forester of Western Pine Assn., reports that all areas previously treated are relatively clean; that spraying resulted in checking

AERIAL PHOTOGRAPHS AND MAPS (right) were used by pilots to locate respective spray blocks and record progress of campaign against spruce budworm in New Brunswick forests. Fraser Cos., Bathurst Power & Paper Co., Irving Pulp & Paper Co. and New Brunswick International Paper Co. were partners with government in mass aerial attack.

PILOTS, FORESTERS, ENTOMOLOGISTS and others (in picture at left) engaged in the vast offensive against spruce budworm in New Brunswick this year. Seventy-seven Stearman planes, many of them supplied by Central Aircraft, Inc., of Yakima, Wash., were used in the campaign over 1,500,000 acres.



VAST AREA COVERED IN CAMPAIGN against spruce budworm in New Brunswick is shown here. The map also indicates several important pulp and paper mill centers near area of infestation—Dalhousie, where New Brunswick I.P. has its mill; Bathurst, operating base of Bathurst Power & Paper Co.; Newcastle, where Bathurst's new sulfate mill is operating; Edmundston, location of Fraser Co.'s principal mill activity, which is on the Maine state line.

the insect. He says, "Now that we look back we can see that instead of losing just 9,000 acres completely killed by the budworm, we would have had many, many times this loss." He pointed out that around 2 million acres of timber were partially killed. Direct and indirect losses "would have been terrific and would have changed the whole way of life in Eastern Oregon," according to Mr. Kolbe.

The committee's treating plan is geared for covering high intensity risk areas rather than stopping the killer throughout the region. It is intended as an aid in bringing about a normal, natural forest balance.

The most extensive remaining infestation, in Oregon, which had to be passed up this year, is 160,000 acres in Northeastern part of the state.

Except for a 70,000-acre area in Santiam River headwaters, all of this season's treating lay to the east of the Cascade range.

Mr. Kolbe said control treatment costs \$1.07 per acre.

The state's flying contractors were Ace Flying Service, Salem; Northwest Aerial Agricultural Service, Coteau, Mont., and Bruce Coombs, Yakima, Wash. Abe Bohler, Orofino, Ida., contracted with USFS for spraying the Santiam unit.

"Texrope" Drives Regulate Flow in Paper Mill Flume

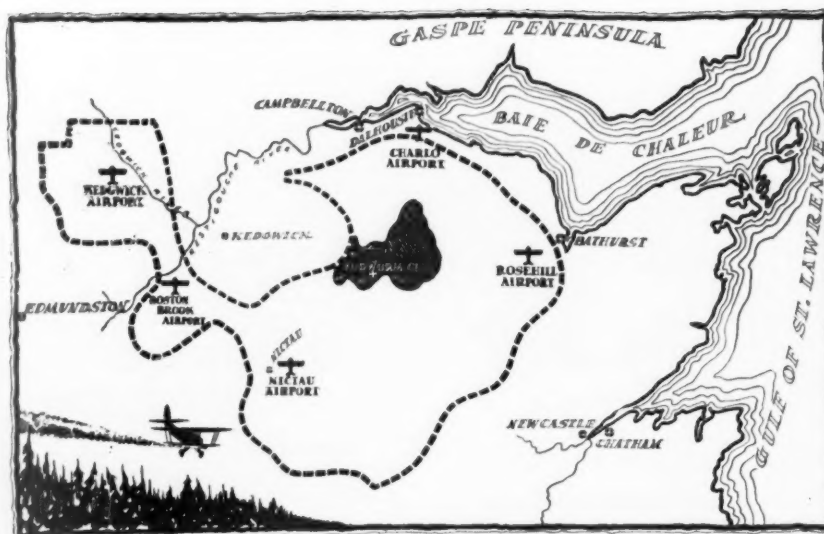
When additional water flow was required for pulpwood logs floated by flume from a railroad siding to its Covington, Va., mill, West Virginia Pulp & Paper Co. recently placed in operation a second booster station comprised of two propeller-type pumps, 60-hp induction motors, and "Texrope" drives with automatic "Vari-Pitch" sheaves.

The drives consist of 9.75 to 18.0-inch pitch diameter, 3-groove, T-section "Vari-Pitch" sheaves and 3-groove, T-section companion sheaves. They connect two Allis-Chalmers 60-hp induction motors to 5½ to 1 ratio gear reducers which drive the 48-inch pumps and maintain required variable flow of water in the flume to regulate the conveying speed of the logs.

Pump speed is controlled by moving the motor toward or away from the driven sheave. This is easily accomplished while the drive is in operation because the motor is mounted on a "Texslide" motor base.

Water for conveying the logs is returned in another flume and is used over and over.

THIS ALLIS-CHALMERS propeller-type pump, 60-hp induction motor and "Texrope" drive with automatic "Vari-Pitch" sheave is one of two such units recently installed on flume at West Virginia Pulp & Paper Co. Covington, Va., to furnish additional water flow. The drive provides required variable speed to regulate flow of water in flume, thus altering conveying speed of logs.



Eager to Find Use For Southern Oak

A Savannah newspaper recently reported it was satisfied with a newsprint made in Herty laboratory in Savannah with 40 percent oak, 40 percent gum and 20 percent pine.

Successful utilization of Southern oak, of which there are many varieties, would prove of practical value inasmuch as it is

Pulpwood section PRODUCTION • MANAGEMENT

commonly found in every major land holdings. From the standpoint of silvicultural management, a market is needed for oak in pulpwood sizes to prevent it from dominating a stand. Poison has been used extensively in Southern forest management to kill out cull hardwoods, particularly oak. Gum, also of many varieties, is already used in commercial production of dissolving pulp and corrugating material for boxes.

Research To Increase Spruce Growth in Ontario

Ontario Paper Co., Abitibi Power & Paper Co. and the Pulp and Paper Research Institute of Canada are co-operating with the governments of Canada and Ontario and the University of Toronto in a forest development program unique in Eastern Canada.

The purpose is to increase and create conditions favoring natural reproduction of spruce for pulpwood on the mixed wood slopes of the Lakehead region, where in some instances the valuable softwoods have failed to reestablish themselves.

Initiated by the woodlands departments of the two paper companies, half the direct cost is being borne by them.

Experts in soils, meteorology, botany and plant ecology as well as in forestry and logging engineering will be required to carry out the program. Other companies will be given an opportunity to participate.

Field work on the project began on limits of the Ontario Paper Co. near Heron Bay on the north shore of Lake Superior.



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**WORKS 24 HRS.
PER DAY—7 DAYS
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This pulpwood pile at the Brown Co. mill is 75 ft. high and contains about 25,000 cords, yet it is less than a month's mill supply. The Lorain-820 is shown equipped with a pulpwood grab for loading conveyor from blockpile.

WIDE WORLD PHOTO

A Lorain-820 crane helps produce big pulp output at the Berlin, N. H., mill of the Brown Co. This Lorain works around the clock, 24 hours a day, 7 days a week. The Lorain-820, equipped with pulpwood grab, keeps a steady stream of wood moving from blockpile to mill conveyor. With a sling, it unloads trucks to blockpile. The Lorain pictured is 8 years old and had currently worked some 14,800 hours. Proof of Lorain popularity at the Brown mill is evidenced by their purchase of a total of 4 Lorains, the most recent a new 30-ton rubber-tire Lorain Self-Propelled crane, model SP-524.

The big Lorain-820 is ideally suited to large pulpwood operations such as this. Big capacity, long reaches, a smooth acting Hydraulic Coupling design are features that help boost production. Whether your mill is large or small, there are Lorain sizes and types to economically serve your needs. Crane capacities range from 6 to 45 tons, with a wide selection of crawler or rubber-tire mountings to do the job most efficiently. Ask your Thew-Lorain Distributor about the Lorain crane pulpwood handling story.

THE THEW SHOVEL CO., LORAIN, OHIO



The unloading of pulpwood from incoming trucks to blockpile is handled by the same Lorain with cable sling. Note the size of the load — an easy job for the big crane.

THEW LORAIN 820

SERIES

SOUTH PLANTS 128 MILLION NEW TREES

The Southern pulp and paper industry, according to H. J. Malsberger, forester-general manager, Southern Pulpwood Conservation Association, has been responsible for planting of 128 million trees in the eleven Southern states extending from Virginia to Texas during 1952-1953. This represents 43 percent of the approximate total of 300 million planted by all agencies, companies, and individuals in these states.

"This record planting is approximately 75% greater than the industry's activity the previous year," Malsberger stated. "At

the rate of planting 1,000 trees per acre, it accounts for bringing back into forest production 128,000 additional acres of worthless land," he continued.

The industry planted 101½ million trees on its own lands and donated 26½ million to private landowners for planting on their lands.

The nurseries operated by public agencies sold 105 million trees to the industry for this program and the remaining 23 million were produced in nurseries operated by the industry.

New Truck Crane Speeds Log and Other Loading

A line of unusual and versatile loaders—adaptable for use on any truck—has been announced by the Ray-Lind Manufacturing Co., of Iron River, Mich. Available in a wide range of capacities, from ½- to 2-ton lifts, the unit converts a truck into a self-loading truck-crane that speeds pulpwood and other materials handling jobs.

Ray-Lind Loaders have been ordered and are being used now by two of the leading pulpwood and sawlog producers in the South. They are also advocated as a profitable investment for small truck operators desiring a means of lifting, loading and handling with one piece of equipment.

The crane unit mounts directly behind the cab and occupies only from 16 to 18 in. of space. There is no reduction in truck body or platform capacity and the entire load-carrying capacity of the bed is retained. Installation is simple as there is no need to alter the truck body—it is simply moved back on the frame.

The loader is made in two models; one with an elevating mast, and one with a "fold-over" superstructure. Power for hoisting is supplied by the truck engine through a power take-off. The type of winch used employs standard automotive parts for simplicity of operation and service.

RAY-LIND MFG. CO. (Iron River, Mich.) has announced this new type self loading truck crane to speed pulpwood loading. It occupies only 16 to 18 in. on the truck behind the cab.



Bankers Are Shown Forest Use Potentials

Bankers can play an important role on developing the full potential of forest resources. With this in mind, the Wisconsin forest industries' Trees for Tomorrow, Inc., headed by Folke Becker of Rhinelander, was host at its Eagle River camp to Wisconsin Bankers Association in early August.

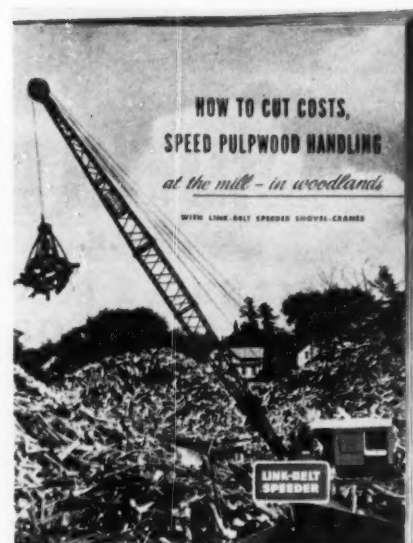
They were welcomed by M. N. Taylor, executive director of Trees for Tomorrow,

Pulpwood section PRODUCTION • MANAGEMENT

were shown a 38 year old forest plantation at Star Lake, one of the oldest in the nation, also Consolidated Water Power & Paper's experimental forest. They saw forest fire fighting equipment, tree planting, and toured Rhinelander's pulp and paper operations.

The U.S. and Wisconsin Chambers of Commerce and the Wisconsin Bankers Association intend to sponsor this forestry tour as an annual event. In announcing this event, the bankers were told:

About half of Wisconsin land area—16,000,000 acres is best suited for forests but are producing only a fraction of the wood needed by industry. More production would mean more bank deposits and more business.



New Link-Belt Speeder Book on Pulpwood Handling

A comprehensive booklet on pulpwood handling with shovel-cranes (cover shown in picture) has been published by the Link-Belt Speeder Corp.

The 16-page booklet is edited for executives and others concerned with pulpwood handling at millyards and in woodlands in all areas. It is an up-to-date study and most complete ever prepared by Link-Belt Speeder. The two-color brochure points out various phases of handling processes where significant cost reductions can be made with Link-Belt Speeder shovel cranes.

With sections on handling at the mill and in woodlands, the booklet includes a section explaining Link-Belt Speeder power hydraulic Speed-o-Matic controls and other features of many models of shovel-cranes.

The booklet, No. 2418, titled "How to Cut Costs—Speed Pulpwood Handling at the Mill—In Woodlands," is available through Link-Belt Speeder distributors or from Link-Belt Speeder Corp., Cedar Rapids, Iowa.

Pulpwood Receipts Higher in Far West and South

Receipts of pulpwood for the first four months of this year were 8,735,000 cords, a decline of 9 percent under last year's comparable period. Domestic receipts were 8,245,000 cords, a decline of 7 percent; and imports were 490,000 cords, a decline of 38 percent. Declines in receipts were registered in the Northeast region, 31 percent; Appalachian region, 4 percent; and Lake States region, 37 percent. Increases were reported in the South, 3 percent; and Pacific Northwest, 5 percent.

Pulpwood consumption for 1953, through the end of April, of 9,090,000 cords, was fractionally under consumption for the same period in 1952. Only the South showed an increase, 5 percent.

WOOD is the ONLY renewable raw material source.



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BIG MACHINE STABILITY - Longer, wider tracks - and a low center of gravity gives greater lifting capacity.

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94-INCH OVER-ALL WIDTH allows the Bantam to be moved from job to job on standard trailers without special highway permits.



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C-35 SPECIFICATIONS BOOKLET
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58-CLO-2

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SHOVEL - Handles up to 100 cu. yds. per hour from stockpile... up to 90 cu. yds. excavating in average material. Automatic dipper trip means quick, effortless dumping. Also available with 1/2 cu. yd. rehandling bucket.



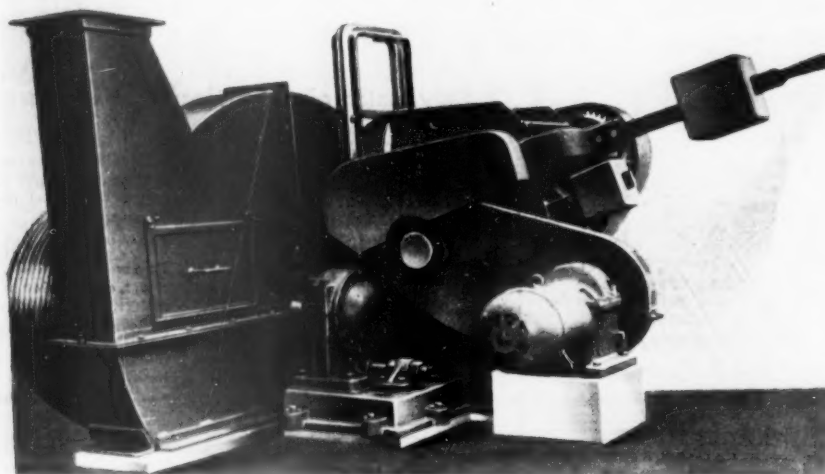
DRAGLINE - Digs 90 cu. yds. per hour in average material. Available with perforated or solid buckets. Ideal for gravel pits, ditch cleanout, cutting new drainage ditches, basement excavations, stockpiling, pits, etc.



CLAMSHELL - Ideal for material handling and loading out of stockpile... precision excavating of bell holes, special excavating on pipeline jobs, clean-out of benches. Handles up to 80 cu. yds. of average bulk material per hour.



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Paper . . . and *The National City Bank of New York*

Research and reforestation are making new wonders "grow on trees"!

Gone forever are the days when you could safely squelch excessive demands by inquiring sarcastically, "Do you think it grows on trees?" For research sponsored by paper companies and other big users of wood pulp has uncovered so many amazing uses for it that there are mighty few things today that *can't* be grown on trees!

Wood pulp is the basic material in most of our paper, most of our containers, and one of our most popular textiles, rayon. And now research into lignin, the mysterious substance that binds cellulose

fibers together, hints of a chemical and plastics industry rivaling that built on coal. And *wood sugar*, believe it or not, may yet be a valuable source of animal and human food!

What's more, as a result of reforestation programs initiated by pulp-using companies, some are actually growing as much new wood as they harvest every year. This, despite the fact that the paper industry is the sixth ranking in the country, with dollar volume last year at a new high of \$7.2 billion.

Many of the big paper makers do business with The National City Bank of New York. They've found, as you will, that our more than \$6 billion in resources and

141 years of banking experience offer distinct advantages when financial help or advice is needed. And, too, National City's facilities are quickly available anywhere. In this country we have correspondent banks in every state, and 68 Branches in Greater New York. To serve you overseas, there are 57 National City Branches, and correspondent banks in every commercially important world city. For information, write The National City Bank of New York, 55 Wall Street, New York City.

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SUMNER CHIPPERS have developed new income for sawmills and veneer plants ... and pulp mills, which in many cases have sponsored such installations, have thus conserved their own valuable standing timber.

Chips produced have met the highest requirements, and SUMNER CHIPPERS the industry's highest acclaim.

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Should Your Mill Switch To Ammonium Bisulphite Pulping?

Among the major advantages are faster cooking, increased yields, elimination of scale, decreased chemical requirements, and the ability to pulp hardwoods

By Gordon A. Crowe

Technical Service Representative
Spencer Chemical Co.
Kansas City, Mo.

Ammonium bisulphite pulping is currently a subject of considerable interest to the management of many leading mills in this country. At the present time nine mills, representing a pulp capacity of over 1,200 tons per day, are operating on ammonia base. Other companies are presently conducting tests to help determine what their future course will be. Since ammonium bisulphite pulping certainly is not a new idea, why this sudden interest?

The explanation seems to break down into three parts: Availability, Cost and Waste Disposal.

Availability. There has been and still is a shortage of ammonia. However, indications are that adequate and reliable supplies will be available to the paper industry soon.

Cost. There is no doubt that ammonium bisulphite acid costs more per gallon than calcium bisulphite acid. This was once considered a serious disadvantage. We now know, however, that the difference is usually more than offset by savings made possible by the use of ammonia.

Waste Disposal. Many companies are giving serious consideration to the evaporation and burning of waste liquor. Because of scaling in the evaporator and fly ash from the boiler, calcium liquors present a more difficult disposal problem than do ammonia liquors.

Because operating conditions at different mills vary widely, it is usually advisable to make a test



Gordon A. Crowe

run before committing a plant to operation on ammonia base. Engineering assistance is available from the technical service sections of major ammonia suppliers.

Conclusions reached by one mill which conducted a 23-day ammonia test run were:

1. Ammonia base pulp gave increased yields when the regular mixture of softwoods was used.
2. Cooking time for softwoods was reduced by at least one hour.
3. Pulp quality was as good as and probably slightly better than the regular calcium base pulp.
4. A mixture of hardwoods (beech, birch and maple) can be cooked in seven hours or less.
5. The use of a small percentage of hardwoods will pay for the increased cost of ammonia base.
6. Digester operation is more uniform when ammonia is used due to clean circulating systems.
7. Bleaching time and chemical requirements can be reduced when the pulp is made from ammonia base acid.

If you have a question about Ammonium Bisulphite pulping, we'll be glad to hear from you. There is no charge or obligation for this service. Just write: Technical Service Section, Spencer Chemical Company, Dwight Bldg., Kansas City 5, Missouri.



A M E R I C A ' S G R O W I N G N A M E I N C H E M I C A L ' S

September 1953

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A NEW ClO_2 PROCESS

CHLORINE DIOXIDE MANUFACTURE AND USE

By John Schuber and W. A. Kraske

of Solvay Division of Allied Chemical & Dye Corp., Syracuse, N. Y.

CHLORINE DIOXIDE is a chemical of rapidly increasing industrial importance. Although known over 100 years, its combination of toxic, explosive, and corrosive properties had relegated it largely to the class of laboratory curiosities. In the 1920's, interest was renewed in chlorine dioxide because of its ability to bleach and remove impurities from cellulosic materials with relatively little degradation of the cellulose.

Research on methods of generation and utilization of chlorine dioxide failed to produce any process for liquefying or compressing it (as is done with chlorine) that would overcome the hazard of explosion. Shipment in solution proved impractical due to prohibitive costs.

To avoid these difficulties, a number of processes were developed whereby chlorine dioxide was manufactured at the point of use. Although these results were encouraging, the use of these processes has not been widely adopted because of high initial plant costs, royalties, low efficiencies, high chlorine to chlorine dioxide ratios, and questionable safety factors.

A new method of producing chlorine dioxide at the point of consumption that surmounts the previous drawbacks with respect to costs, product quality and safety has been developed by the Solvay Process Division of Allied Chemical & Dye Corp. This process is in commercial operation on a continuous basis in conjunction with a new and improved method of using chlorine dioxide for bleaching cellulose pulp, also developed by Solvay.

The Solvay method of chlorine dioxide manufacture is shown in Figure 1. Sodium chlorate in acid solution is reduced to chlorine dioxide by a reducing agent, in this case methanol. Since the cost of the reducing agents is a minor item, methanol has the great advantage that it produces little chlorine in side reactions. This al-



AUTHORS OF THIS ARTICLE on the manufacture and use of chlorine dioxide, written especially for PULP & PAPER: JOHN SCHUBER (left) and W. A. KRASKE (right) of Solvay Process Division, Syracuse, N. Y., of Allied Chemical & Dye Corp.

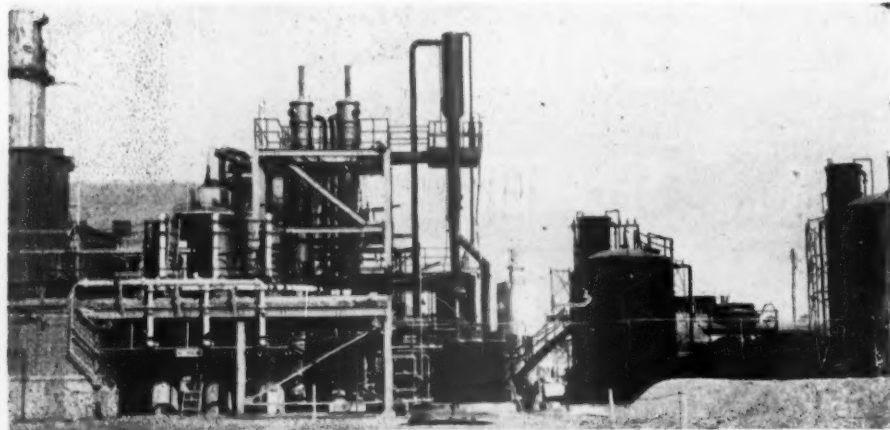
Of Things to Come

One of the significant new trends in wood-pulping is the increasing use of chlorine dioxide bleaching for higher brightness and cleaner pulps. Several new mills have, or are installing ClO_2 plants.

This exclusive story on the Solvay process for chlorine dioxide bleaching gives complete details of an operation first described by PULP & PAPER in its Nov. 1952 issue in an article covering the 200-ton pulp mill of Riegel Carolina Corp., at Acme (Riegelwood), N. C.

The Riegel mill used chlorine dioxide in the sixth bleach stage to manufacture high brightness pulp. But choice dioxide has shown possibilities for use in shorter stage bleaching on lower brightness pulps, and some development work is being carried out along these lines right now by the industry. So this is a story, which by all indications, is yet to come.

EXTERIOR VIEW OF CHLORINE DIOXIDE plant in the chemicals' manufacturing center of Riegel Carolina Corp., Acme (Riegelwood), N. C. The story on this operation first appeared in the Nov. 1952 issue of PULP & PAPER, and a complete description of the process is contained on these pages.



lows more efficient usage of chlorate, which is a major cost item.

Use Three Reactors

In physical layout, the plant consists of three reactors, each with a packed stripping section, and fitted with external circulation and heat exchanger for reaction control. Operation is continuous, with the three reactors in series. Chlorine dioxide gas is absorbed in water in two packed towers in parallel. The water solution falls to a receiver tank, from which it is pumped to the bleach cell. The spent liquor from No. 3 reactor goes to a neutralization tank, for further processing and use when associated with a kraft pulp mill.

In normal operation, sodium chlorate solution and sulfuric acid are fed to the circulating line on No. 1 reactor. A portion of the methanol is also added at this point. A low pressure blower furnishes a stream of air to the reactor, which strips chlorine dioxide gas from the reactor liquor and carries it to the absorbers.

The partially reacted liquor continually overflows the reactor reservoir, in quantity equal to the quantity of feed, and this is introduced to the circulating system of No. 2 reactor, where further addition of methanol occurs, and air again sweeps chlorine dioxide out to the absorbers. This process is repeated at No. 3 reactor.

Advantages Offered

This arrangement offers a number of advantages. The reaction is moderated and readily adjusted for efficiency and production rate. Chlorine formation due to side reactions is minimized, and the air to each reactor can be adjusted to give maximum allowable concentration for good absorption without exceeding safety limits. Feed, overflow, and gas piping are so connected that any reactor can be taken off-stream for maintenance without halting production. This last is an important consideration, since the associated pulp mill and bleach plant, operating around the clock at 200 tons per day and upwards, is not readily shut down.

Due to the explosion hazard, the concentration of chlorine dioxide gas throughout the system is limited to 10 percent. Since the bleach plant desires as concentrated a solution as possible, the existing installation at the Riegel Carolina Corp., Acme, N.C., uses a steam jet refrigeration unit to provide 10°C . water to the absorbers. By this means a solution strength of six grams per liter can be maintained efficiently.

The spent liquor from No. 3 reactor consists mainly of sodium bisulfate and excess sulfuric acid. If the associated pulp mill operates by the kraft process, this waste liquor may be neutralized with any available sodium alkali, such as soda ash or kraft black liquor, to give salt cake which is the make-up chemical in the kraft recovery cycle.

Construction Materials

Materials of construction have now been developed to the point of satisfactory performance. Stoneware, porcelain, or steel with membrane backing and acid-brick lining pointed with Vitroplast cement is acceptable for reactor and absorber towers. Piping is Saran-lined steel, or porcelain. Heat exchangers are Karbate. Installed pumps are Durichlor and Irecmet. Kel-F is in use for valve diaphragms, and Teflon for packings. These materials do not necessarily



Tree crops need protection, too

Fire and the elements are not the only destroyers of timber crops. *Actually, insects and disease annually destroy 30% more timber than forest fires!* If we are to keep our forests green, this insect menace to our future supply of wood products must be actively combatted.

In the Northwest, a strong program has already been carried out against the ravages of the spruce budworm. In Washington and Oregon alone, more than 40 billion board feet of timber have been saved which otherwise would have ended up as waste.

Aerial spraying of insecticide did the job... and the Pennsalt-produced insecticide proved 99% effective. The value of the salvaged timber has been conservatively set at \$785 per acre, yet the cost of saving it averaged only a little more than \$1.00 per acre!

Similar methods will undoubtedly prove equally effective in ridding other forest lands of insects and disease... wherever private interests get their heads together in a concerted plan of action. Pennsalt technicians will be glad to offer their assistance on these problems from coast to coast.

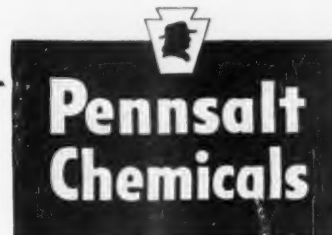
In the West: **Pennsylvania Salt Manufacturing Co. of Washington,
Tacoma, Wash. and Portland, Ore.**

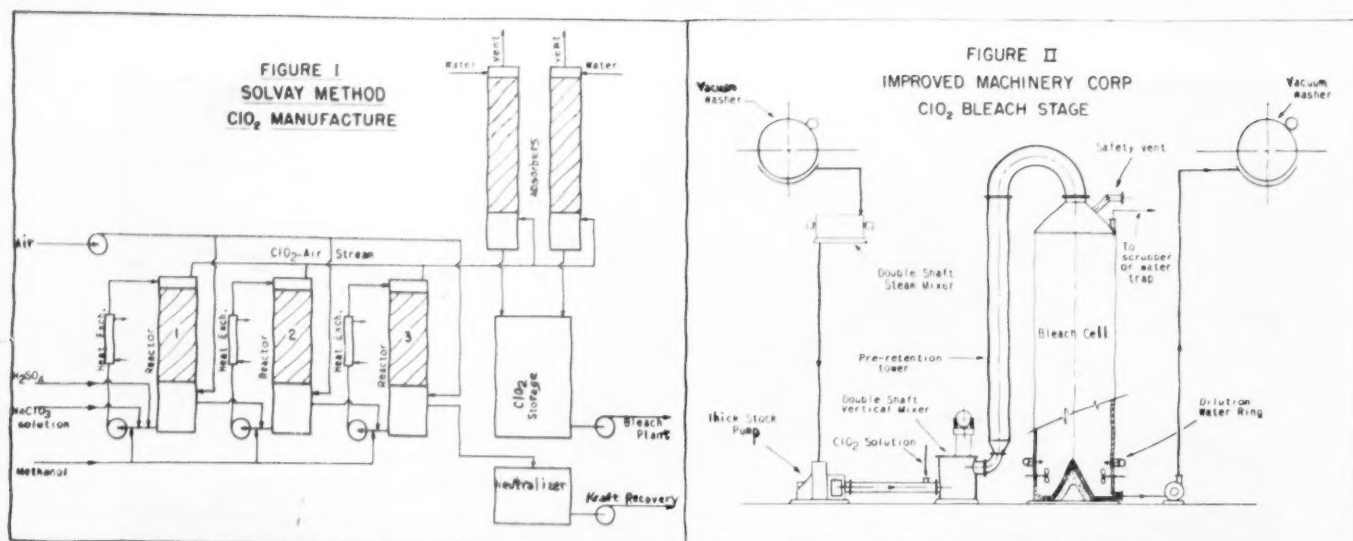
In the East: **Pennsylvania Salt Manufacturing Company
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Timber is a crop... let's protect it

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complete the list of possibilities, but they do represent those on which the greatest experience has been accumulated. A test program is continually under way to develop alternate materials of construction.

One Man Operation

The plant is operated by one man on a full time basis. His duties include periodic sampling and analysis of the gas streams for purposes of safety and efficiency, and sampling and analysis of the final solution. No instrumental method has yet been developed to supersede this testing, but otherwise the process can be controlled from a central instrument station. The process has proved easy to control; and the small quantity of material actually in process at a given time renders starting, stopping, and production rate changes convenient and rapid. Designed for three tons per day of ClO_2 , the plant at Acme has been operated successfully

at rates of from 0.3 to 3 tons per day, with little effect on efficiency.

Costs

The cost of the equipment as described, plus storage tanks, building, and instrumentation, is estimated on the basis of plants now under construction at \$150,000 to \$170,000. On this basis, the cost of chlorine dioxide, including raw materials, labor and maintenance, power and services, depreciation, overhead and taxes is about 25 cents per pound.

The initial installation was made at a new pulp mill, where space was available and climatic conditions permitted outdoor construction. The unit occupies a floor area 24 by 44 feet, but the arrangement of equipment is flexible and can be compressed and rearranged to fit available space.

This method of manufacture is available to this industry by non-exclusive contract on a

royalty-free basis. Solvay provides the basic process plans and information, engineering assistance, and consultation during the design stages as well as during the start-up and training period as part of its program of service to customers. Technical assistance is available thereafter as required.

The effective utilization of chlorine dioxide is as important as its efficient production. Chlorine dioxide was originally considered a high cost super bleach, to be used only when high quality requirements overrode costs. Experience has shown, however, that if it is used efficiently, it can be employed to advantage at any brightness level, offering quality benefits at about the same cost as conventional bleaching methods.

The important factor in chlorine dioxide bleaching is that the effective bleaching temperatures are in the range of 150 to 180°F. However, at these temperatures the partial pressure of chlorine dioxide is high, and in conventional bleaching equipment losses of chlorine dioxide to the atmosphere result in excessive consumption. This has led to erroneous evaluation of ClO_2 bleaching.

No Gas Loss System

The benefits of bleaching under conditions of no gas loss were investigated in the Solvay laboratories, and a design incorporating the desired features was developed by Improved Machinery Inc. of Nashua, N. H. This equipment is illustrated schematically in Figure II. Pulp from the preceding bleach stage is washed and thickened on a vacuum washer to a consistency of about 20 percent fiber.

This stock is mixed with steam in a double shaft mixer, raised to bleaching temperature, then dropped to a patented thick stock pump, which forces the pulp through the chlorine dioxide mixer and into the rising leg or pre-retention tower. Thus, chlorine dioxide contacts the pulp at the point where pump pressure and hydrostatic head combine to give the best possible mixing.

Initial reaction between chlorine dioxide and pulp is rapid, and by the time the pulp plug reaches the top of the pre-retention tower and drops into the main cell the quantity of chlorine dioxide and consequently the partial pressure has been greatly reduced. In those cases where the initial quantity of ClO_2 is small enough to leave relatively small residuals, the main cell is allowed to vent through a small packed tower where a water spray traps and returns chlorine dioxide, yet allows trapped air to escape. In cases where high usage of ClO_2 causes higher residuals the tower is designed for back pressure by the use of a water trap, which simultaneously maintains a controlled back pressure and reabsorbs chlorine dioxide vapor.

The pulp proceeds slowly down the cell, for a maximum retention period of five hours. Near the bottom, dilution water is injected and the diluted stock is circulated for uniform mixing, then pumped up the vacuum washer. This is the final stage in the bleaching process. At this

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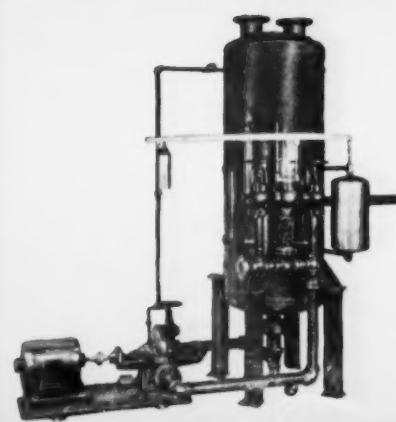
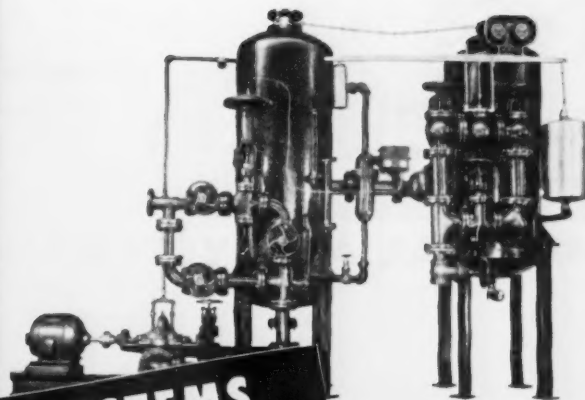
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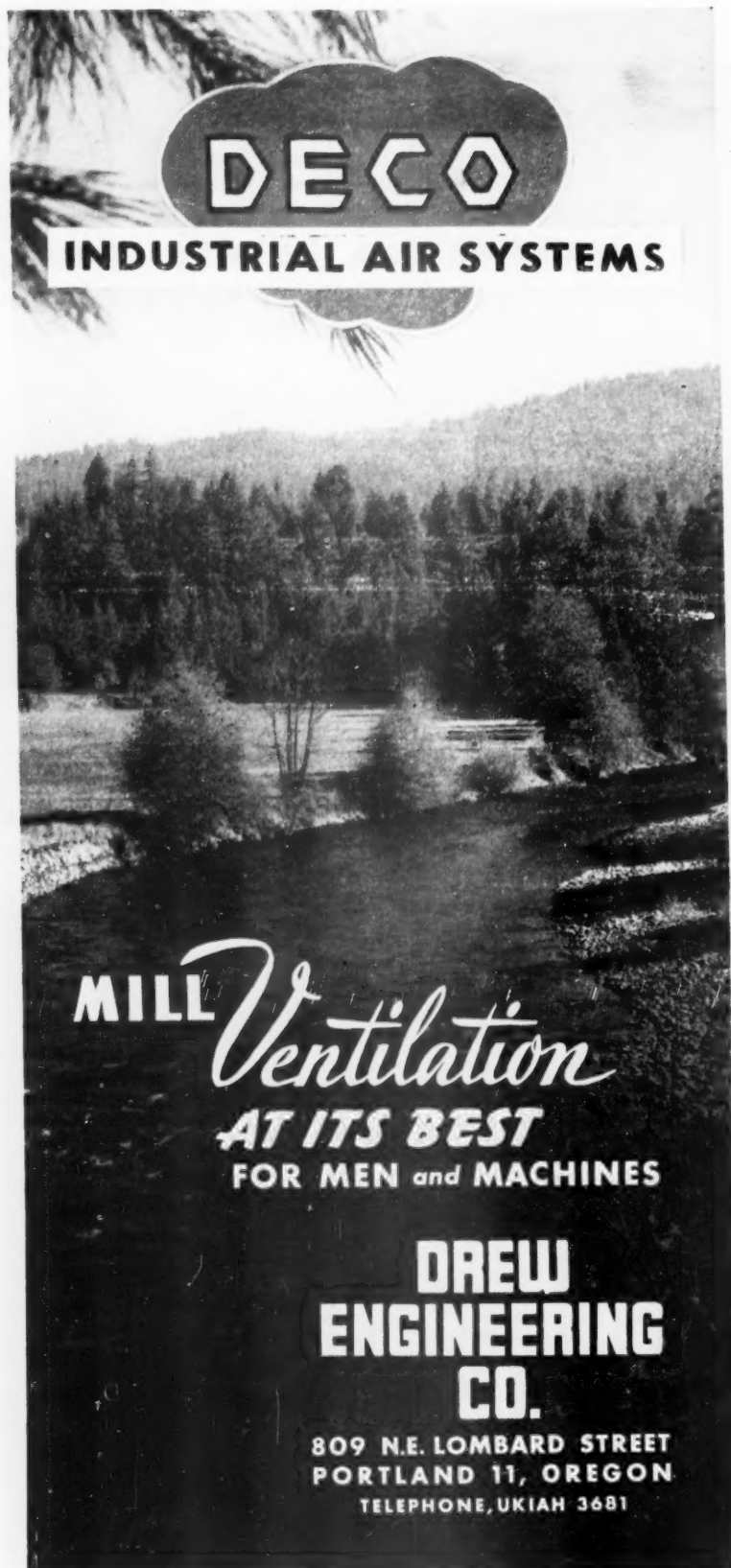
FOR OLDER MACHINES



Here's the Fulton dryer drainage story and we'll tell it to you quick. There are now Fulton Dryer Drainage Systems on all the latest machines—all paper machine builders specify Fulton. They are also going onto the smaller and older machines in increasing numbers. Why? Because a Fulton system always pays off and no group of mill officials can afford the quality, tonnage and steam losses due to improper drying. And so we urge you operators of smaller and older mills still staggering along without Fulton drainage to check with some of the operators that know it first hand—and do it soon. Also write for technical bulletin.

- 10% to 30% production increase.
- Positive reaction in steam costs—even with tonnage gains.
- Improved quality. Uniform drying. Less cockle or curl.
- Moisture content control.
- No over-drying.
- Engineering survey-machine study. No obligation.

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DAYTON, OHIO



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FOR MEN and MACHINES

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time there are no economically feasible materials for washer construction capable of standing up to the corrosive action of even extremely dilute ClO₂. Therefore, either sulfur dioxide or caustic soda is injected with the dilution water into the bottom of the bleach cell to neutralize excess chlorine dioxide thus protecting the washer; caustic is preferred.

High Brightness Results

This bleaching stage has produced 90 G. E. Brightness on kraft pulps without loss of strength, whereas conventional sequences have difficulty in exceeding 80. Addition of chlorine dioxide varies from 0.25 to 1.0 percent, depending on the pulp condition and desired results. The additional cost is largely offset by cut-backs that can be effected in the use of chlorine, hypochlorite, and caustic soda in preceding stages. It seems probable that future bleach plants will accomplish in four stages the bleaching that now requires from five to eight stages. This will result in a considerable saving in capital investment, since an average stage involves about \$350,000.

Chlorine dioxide producing units based on this process are now under construction in two sulfite dissolving pulp mills, a sulfite paper pulp mill, a pre-hydrolysis kraft mill, and two kraft mills. The design permits enlargement without change in layout. Plans are now being completed on a new simplified design to produce small quantities on a continuous basis for such diverse applications as may be encountered in small paper mills, water treatment plants, flour mills, rendering plants, and the like.

Solvay has applied for patents covering this new method of chlorine dioxide production.

MUNCHAUSEN STORY

(Continued from page 92)

after initiating a tear, wrappers four hours, bus tickets one hour, and posters three minutes.

The idea took on like wildfire, everyone clamored for the special short-life paper and the mill's sales shot up by leaps and bounds. The manager's salary was doubled, the chemist was elected to a seat on the board and in fact everything in the garden was lovely until the inevitable happened, as it always does in a paper mill. During the chemist's annual vacation the reaction-time schedule was left in the hands of a newly-hired man who, being of an egalitarian disposition, thought he would put the same amount of special fiber in every furnish. After all it would save a lot of time in weighing it out if he kept to a fixed quantity rather than weighing so much for posters, so much for tickets, and so on. It wouldn't have been so bad if he'd chosen a 4- or 6-hour reaction-time, but, unfortunately for the mill, he fixed on the poster disintegration time of 3 minutes.

Within a month the fat was in the fire. Complaint after complaint rolled into the mill. Rapidly disappearing bus tickets had led to numerous acrimonious squabbles between passengers and inspectors, newspaper purchasers tearing the paper slightly in their haste to see who had won the 3:30 race had had the sheet disappear before their eyes, and innumerable bags of fruit, eggs and other delicacies had precipitated abruptly to the ground when the paper had undergone its chain reaction prematurely.

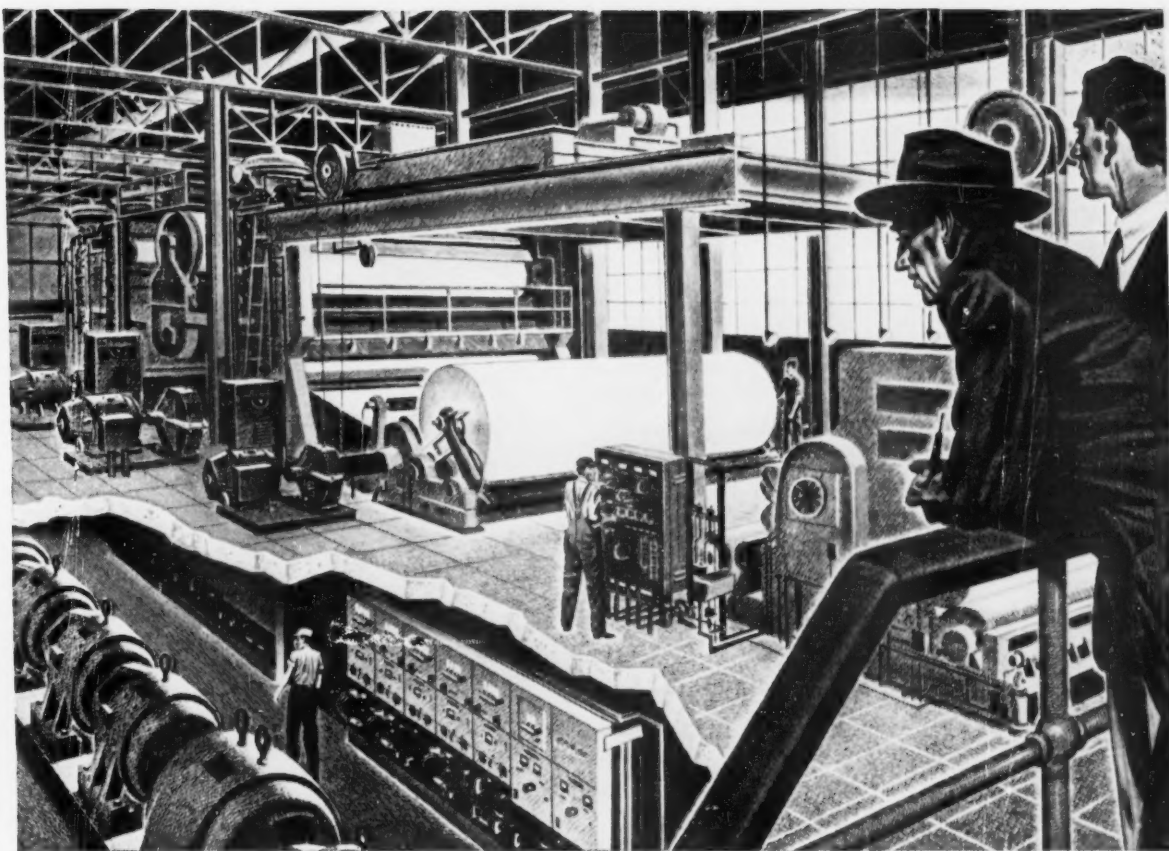
By the time the claims had all been settled the mill was in very low water indeed and it was only by dint of almost superhuman effort on the part of the manager that it was placed on an even keel again, confining its attention to papers made from good, honest and genuine cellulose fiber.

To think the cinema could have led to such a change of fortune! Incidentally the chemist is no longer a film fan.

—S. V. SERGEANT

Crystal Tissue Co. Adds Big Warehouse

A new modern \$50,000 warehouse has been completed at The Crystal Tissue Co., Middletown, Ohio, which is being used, chiefly, to store Crystal Christmas gift wraps waiting fall shipment. It will also be used to store finishing materials needed in manufacture and packaging.



Wide Speed Range...

WITH HAIRLINE ACCURACY

Means profits in paper... or in your production picture

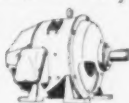
The paper industry affords just one example of the results which Reliance skill in application engineering and equipment design is accomplishing in all industries. For instance, on papermaking machines having up to 17 sections, each with its individual motor, the Reliance V*S System provides speeds up to 2500 feet per minute, adjustable over ranges of 10 to 1, or more, with better than 1/2 of 1% accuracy.

With profit margins in today's highly competitive markets tied directly to rate, continuity and quality of output, profit-minded management is turn-

ing more and more to Reliance for help in solving its toughest drive problems.

For your application, too! As the user or the builder of machinery, you may have a problem that can be solved by a specially engineered drive or by one of the many rugged Reliance industrial-duty motors. Whichever your situation, Reliance is ready to help you. A call to your nearby Reliance Sales Office... or a letter to us direct... will place at your disposal almost half a century of Reliance specialized engineering experience in the application of electric drives.

A-1468



RELIANCE ELECTRIC AND ENGINEERING CO.

1105 Ivanhoe Road, Cleveland 10, Ohio • Sales Representatives in Principal Cities



MOTORS • GEARMOTORS • ADJUSTABLE-SPEED DRIVES • MOTOR-GENERATOR SETS • ELECTRONIC AND MAGNETIC CONTROLS AND REGULATORS

September 1953

109

**ONLY NASH VACUUM PUMPS
HAVE ALL THESE FEATURES**

- One Moving Element. Non-pulsating Vacuum.
- No Internal Parts In Wearing Contact. No Internal Lubrication. Handles Liquid With Air.
- No Expert Attendance. Constant Efficiency.
- Low Maintenance Cost.

Plus—

NASH ENGINEERING COMPANY
410 WILSON AVE., SO. NORWALK, CONN

2½ Percent Boost In Pacific Coast Pay

Anson B. Moody, president of the Pacific Coast Assn. of Pulp & Paper Mfrs., says the new contract for 18,000 employees in 38 Pacific Coast mills of three states will increase payrolls in excess of \$2,500,000.

The boost was 2½ percent, accepted by AFL unions bargainers and submitted to locals for expected approval. Average earnings went to \$2.19 an hour. The male rate base is to be \$1.76½, the female, \$1.47½.

Manufacturers agreed to pay wages of an additional union delegate from each local to the coast labor-management safety conferences while attending. Also procedure for selections and promotions in the mechanical structure was completely revised.

Wage Boost in Lake States

Steel set the trend again, as most labor experts agree, and in the Lake States, the trend in the pulp and paper mills was to generally boost wages by 5 to 10 cents (as in Kimberly-Clark mills) or 4 to 6 percent. Men's base rates are now generally from \$1.46 to \$1.52.

Wage Increase Pattern In Southern Mills

After one month's adjournment, during which an increase pattern was fairly general over the nation, the AFL unions and Southern Kraft Division, International Paper Co., finally came to an agreement in June for a 3 percent wage increase for nearly 12,000 employees in eight Southern mills in six states.

Wage increases range from 5 to 8 cents. Shift differentials were raised from 2 cents on second and third shifts to 3 and 5 cents respectively. Improved holiday and overtime clauses were written. Men's base is now \$1.37 and women's, \$1.31.

Union Bag & Paper's 5,600 employees also were accorded a 3 percent increase and similar benefits and also have bases now of \$1.37 and \$1.31.

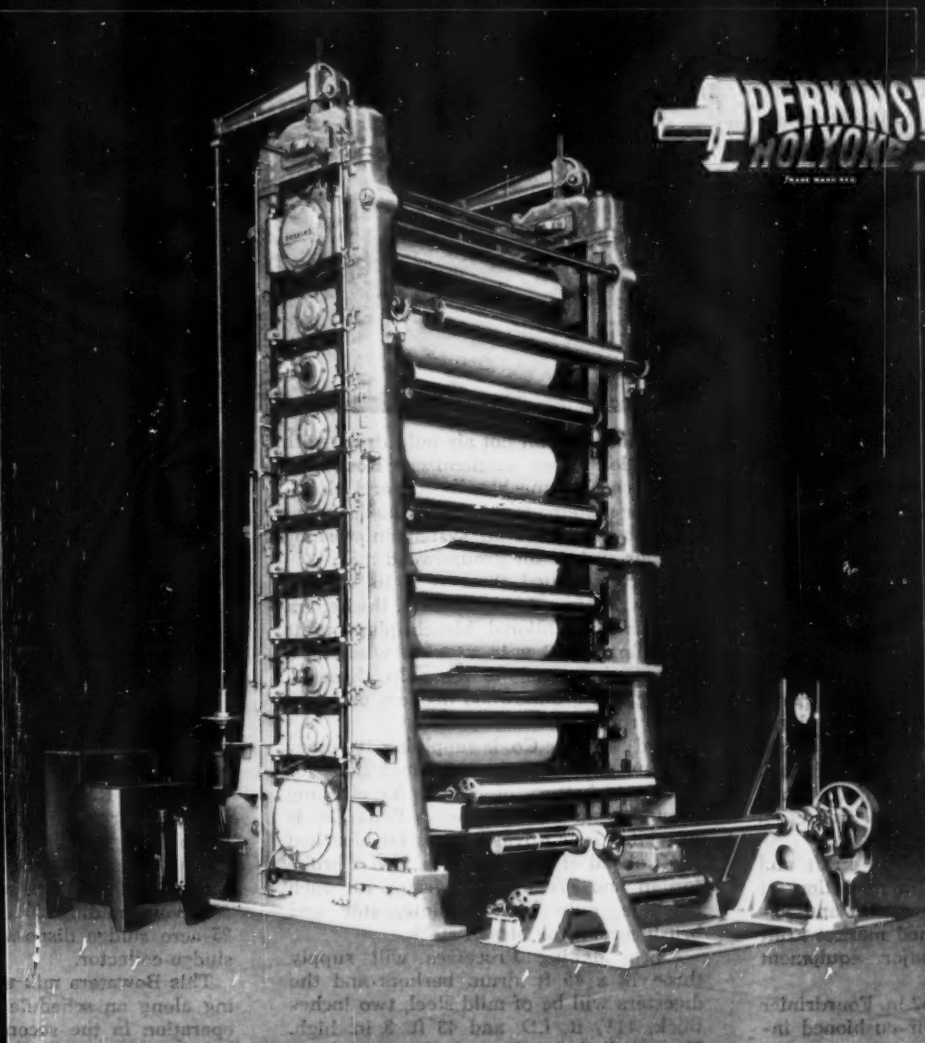
Crown Z's 100 Million Dollar Program Explained

"A rapid growth industry and a rapid growth market"—these are the terms used by President J. D. Zellerbach of Crown Zellerbach Corp., describing the paper industry on a tour he recently made of his company's U.S. and Canadian mills.

"The industry has grown one-third in seven years," he said.

A \$100,000,000 Crown Zellerbach improvement program was carried out in the past seven years. Now C-Z produces one-third of pulp and paper consumed in 11 Western States.

Mr. Zellerbach spoke to local leaders of business, officials, company personnel, etc., in mill communities. He pointed out the organization's future position has been improved through merging with St. Helens Pulp & Paper and Canadian Western Lumber Co.



PERKINS ten-roll 74" Web Supercalender. All rolls in Timken anti-friction bearings. Forced feed oil lubrication to all bearings, with oil pumps. Foxboro air-pressure system. Motor lift for separating rolls. PERKINS CALENDERS are noted throughout the industry for remarkable endurance. . . . They are running steadily, even under the most severe operating conditions, with utmost in power economy.

B. F. PERKINS & SON, Inc.
HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

BOWATERS ON THE HIWASEE

EQUIPMENT ORDERED — CONSTRUCTION WELL UNDER WAY

Construction is well under way now for Bowaters Southern Paper Corp. mill on the banks of the Hiwasee River at Calhoun, Tenn., and all major equipment has been ordered. Karl O. Elderkin, vice president and general manager; Vic Sutton, mill manager and assistant to Mr. Elderkin; M. J. Osborne, electrical engineer; R. B. Reid, purchasing agent, and other administrative executives have moved there.

The accompanying artist's sketch indicates the general layout. Main buildings will be about 1200 ft. long. Note the railroad shed on river bank at end of the long machines and finishing building. There will be six acres under roof. An illuminated "Bowaters" sign is over the entrance of the main mill section. Highest structures are recovery and bleach plant, also pulp and power, to the right. Main buildings face the highway and are red and buff brick with corrugated glass panels and glass block. Roofs of precast concrete slabs are tar and gravel covered. Most interiors are buff tile.

At lower center is reception building also housing personnel, time office and cafeteria with only part of 600-car parking area showing. Mill offices of glazed tile are at lower left. An 18 x 66 ft. laboratory of glazed tile is at one end of stock preparation on second floor of the main mill entrance. J. E. Sirrine Co. are design and construction engineers.

In early 1954, groundwood, kraft and newsprint mills will be in operation, at rate of 125,000 tons of newsprint and 50,000 bleached or unbleached market kraft pulp annually. The major equipment follows:

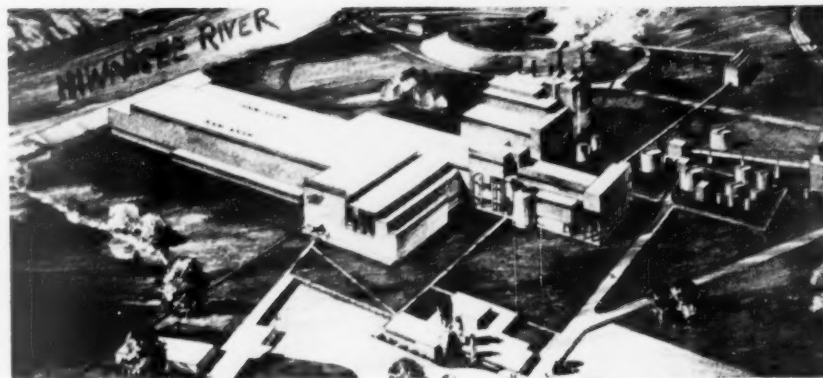
Beloit is making two 252 in. Fourdrinier machines with Beloit's air-cushioned inlet, automatic suction pick-up, suction transfer press, wringer roll, two straight suction presses, four dryer sections of 55 paper dryers (60 in.) and 11 felt dryers; open 8 roll calender stack, heavy duty reel and winder, all by Beloit.

General Electric Co. is providing a sectional drive for the machine and also two General Electric power plant turbo-generators of 10,000 kw. each. The electrical distribution system consists of two interconnected elements, one from the Tennessee Valley Authority system, serving groundwood mill, the other from the GE turbo-generator, serving pulp and paper mill. Electric power is supplied at 13,800 volts, 3 phase, 6-cycle and distributed to substations for conversion to 460, 2300 and 4160 volts.

General Electric also supplies eight big 4,500 hp. synchronous motors to drive as many Great Northern type grinders.

Stebbins Engineering & Mfg. Co. will do all tile work including units for the 3-stage IMPCO equipped and designed bleached plant and for chests, wire pit, etc. in paper and pulp mills.

J. O. Ross Engineering Corp. is provid-



ing a 156-in. trim hot air pulp dryer with 14-section Ross economizer. Ross also provides both machine hoods and elaborate air systems for the machine rooms as well as hoods and air system in washing and air system for groundwood mill.

Impco supplied three 8 x 16 vacuum pulp washers, two 9½ by 10 ft. thickeners, various conventional bleach plant units including the 8 x 14 vacuum washers, a 2-press wet machine for pulp ahead of drying, six groundwood deckers and machine room saveall.

Bird Machine Co. is supplying 10 rotary screens ahead of the machines, five for each, and battery of Dierces for cleaning groundwood. E. D. Jones & Sons Co. is providing four Royal jordan for bleached kraft ahead of the machines, also a broke jordan and broke disintegrator for each machine, pulp broke disintegrator and brush jordan for bleach stock.

Fibre Making Processes will supply three 12 x 45 ft. drum barkers and the digesters will be of mild steel, two inches thick, 11½ ft. I.D. and 43 ft. 3 in. high. They will have Yarnall-Warning blow valves and Foster-Wheeler is making the blow steam and turpentine recovery systems.

There will be four Sprout-Waldron refiners, one for kraft and three for groundwood. Appleton Machine Co. provides four (Cowan) primary and a secondary screen for groundwood and two Cowan centrifugal screens for kraft pulp.

Allis-Chalmers is supplying two bull screens for groundwood and stock and white water pumps for paper mill and bleach plant. Crane stock valves are used throughout. Water and stock will carry through Transite pipe except where stainless steel is selected, and some Saran lined pipe is specified for bleach liquors. Norton stones and a Jeffrey hammermill are specified for the groundwood mill.

A Midwest Fulton drainage system, seven Nash Engineering vacuum pumps and Farrel-Birmingham roll grinder are other machine room items. For the pulp mill, Lamb Grays Harbor is providing a heavy duty sheet cutter and layboy and Washington Iron works (Seattle) is making a baling press.

Combustion Engineering-Superheater Inc. is providing two 150,000 p.p.h. power boilers using natural gas or Bunker C fuel oil, the latter in emergencies; one 125,000 p.p.h. boiler to burn bark with spreader stocker, or natural gas, and also one 123,200 p.p.h. black liquor recovery boiler with Western Precipitation Corp. twin electric precipitator. Goslin-Birmingham provides a 6-body sextuple effect evaporator.

Dorr Co. equips a conventional causticizing plant and supplies an Oliver mud filter at feed end of a 250 ft. long lime kiln.

Ingersoll-Rand is supplying two compressors for mill and turbine room and three 1200 gpm. boiler feed water pumps.

Waste disposal will be via a 140 acre settling basin, a large secondary treatment reservoir holding 30 days' waste, and a 25-acre sludge disposal area with rotary sludge collector.

This Bowaters mill at Calhoun is moving along on schedule and is to go into operation in the second quarter of 1954.

As of July 31, about 4,700 tons of steel had been erected out of a total steel requirement of over 8,400 tons.

Aside from principal mill structures, work is well-advanced on the facilities building, for locker rooms, cafeteria, etc.

Crown Z Plans More Production at St. Helens

An additional mill improvement program of \$7,500,000, increasing production, will be carried out at St. Helens Pulp & Paper Co., St. Helens, Ore., as a result of the merger of that company with Crown Zellerbach Corp.

Frank N. Youngman, vice president of Crown Z, became president of St. Helens, and Ray Schadt became mill manager, as was announced last month. St. Helens is a 2-machine kraft mill with bag plant and five tree farms of 117,000 acres in Oregon. Kraft papers, bleached and unbleached, towel, wrap, specialties, bag, tag board, etc. are made.

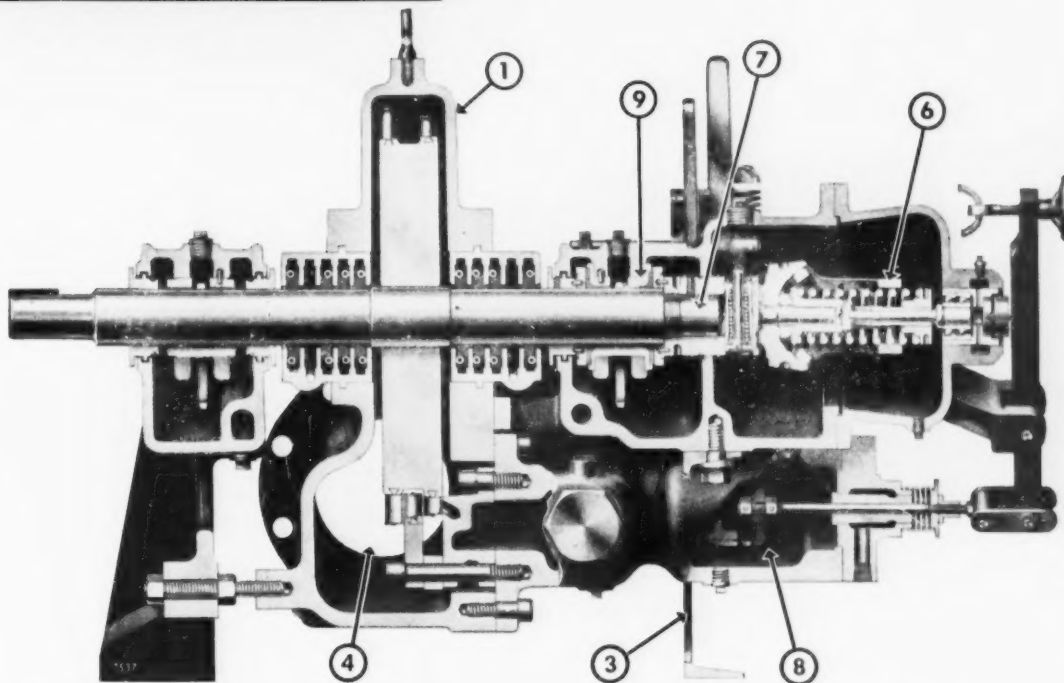
Annual growth on the tree farms are estimated at 36 million bd. ft. (55 ft. to a cord).

NEW DE LAVAL

HCB

SINGLE STAGE TURBINE

can be ordered from stock



1 Case and Cover Split Horizontally on centerline for ease of maintenance.

2 True Centerline Casing Support assures distortion-free radial expansion. Not shown.

3 Flexible Support at governor end provides for axial expansion.

4 Exhaust Opening either right or left side for installation flexibility.

5 Steam Strainer, protecting trip and governor valves, is removable for cleaning without

breaking steam connections. Not shown.

6 Constant Speed Governor features governor weights pivoted around frictionless surfaces.

7 Complete Governor Assembly is now replaceable as a unit.

8 Balanced Single Seated Main Governor Valve has proportional flow characteristics for sensitive, positive control.

9 Shaft Locating Bearing of adjustable double collar type.

Horsepower: 100 MAX
Steam Pressure: 300 PSIG MAX
Steam Temperature: 550F MAX
Exhaust Pressure: 25 PSIG MAX
Speed: 4,000 RPM MAX
Steam Inlet: 2"-250# ASA FLG.
Exhaust: 6"-150# ASA FLG.
Weight: 1,200 LB

Here's the new De Laval HCB Single Stage Turbine which is now "on the shelf" . . . ready for immediate shipment. This mechanical drive turbine is simple, rugged, designed for long economical life and low maintenance. For example, note the true centerline casing support, the replaceable governor, the remova-

ble steam strainer. Investigate all the advantages of this versatile driver. It is ready to handle—at low cost—a variety of applications in your plant.

*Send for new Bulletin 4206
which gives vital facts and figures*



DE LAVAL Mechanical Drive Turbines

DE LAVAL STEAM TURBINE COMPANY

813 Nottingham Way, Trenton 2, New Jersey

DL205

September 1953

113

ESCO High Alloy Castings RESIST CORROSION ALL THE WAY THROUGH!



Preparing centrifuge rotor castings for ZYGLO black light examination.

X-Ray inspection makes sure ESCO Castings for corrosion service are free of internal or hidden flaws.



Advanced gamma ray inspection, using Cobalt 60 Capsule and photographic plates.

ESCO ADVANCED NON-DESTRUCTIVE INSPECTION ASSURES UNIFORMLY SOUND CASTINGS

A wide range of ESCO High Alloy Products available for critical conditions of Heat and Corrosion.

- Pipe and Flanges
- Heavy-duty Valves
- Standard and Special Flanged Fittings
- Welded Fittings
- Screwed Fittings
- Kiln Cooler and Roaster Parts
- Refinery Castings
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ESCO

ELECTRIC STEEL FOUNDRY CO.

2166 N. W. 25TH AVE., PORTLAND 10, ORE.

712 PORTER ST., DANVILLE, ILL.

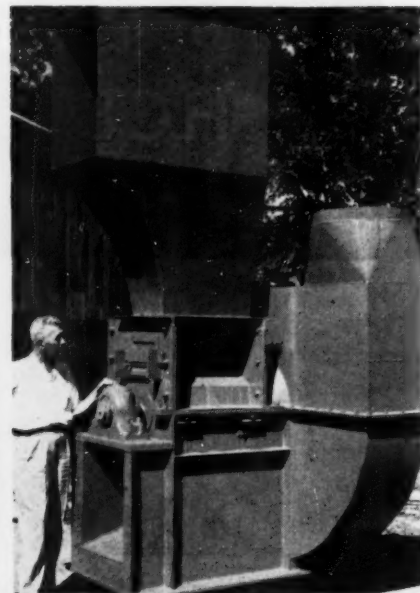
Of utmost importance in extreme corrosion service are castings that are sound *all the way through!* To make certain you receive only the highest quality alloy castings that can be produced, ESCO employs closely controlled scientific techniques for non-destructive inspection and testing. This is only one of the many reasons why an ESCO high alloy casting in your worst corrosion trouble spot will outlast others many times over!

ESCO metallurgical engineers work with more than 40 different high alloy steels every day...making pioneering contributions to the art of producing castings of unsurpassed corrosion resistance.

ESCO will be glad to recommend the *right* high alloy casting to combat *your* particular corrosion trouble. Whether you need one casting or an entire installation, your inquiry will receive prompt attention.

Offices and Warehouses: Honolulu, Hawaii; Houston, Texas; New York, New York; Los Angeles, San Francisco, California; Seattle, Spokane, Washington; Centralia, Pennsylvania; Eugene, Medford, Oregon; Salt Lake City, Utah. In Canada: Vancouver, B. C., and Toronto, Ontario.

BLO-HOG IS HARDY PIECE OF EQUIPMENT



MODEL NO. 25-60 S-H 26, of MONTGOMERY BLO-HOG, shown with inventor, W. T. S. Montgomery, President and Chief Engineer of Jacksonville Blow Pipe Co., Jacksonville, Fla. For waste wood and materials up to 12 inches diameter, it is one of 30 different sized models. It is capable of handling ten tons of scrap an hour, Montgomery says.

THE MONTGOMERY "Blo-Hog" is offered by Jacksonville Blow Pipe Co., of Jacksonville, Fla., as a new and hardy piece of equipment to grind up bark and waste wood for fuel, or for wallboard, felt, wood flour, sweeping compounds, chicken litter or other useful purposes.

Back in the 40's, W. T. S. Montgomery, who "likes difficult jobs but prefers impossible ones," was visiting a veneer plant in the South and there and then accepted a challenge to build a machine to handle waste veneer and bark efficiently.

For the pulp and paper industry, the problem has become more acute as they have gone into greater use of hardwoods. The hardwood bark, particularly gum, now used extensively in the South, has been a serious problem for their live bottom bins. In other regions of the country, hardwoods are being used more and more, and the Blo-Hog is available to operations all over U.S., Canada and Mexico.

It took several years for "Bill" Montgomery to work out the bugs in what he calls his "all-purpose hog." It will handle up to ten tons an hour, is designed in 30 models. It is used on pine, oak, gum, hickory, elm, wet veneer, sandy bark, cores, slabs, and wire, nails and 1/4th inch steel will be chewed up without damage, he said. Cutting surfaces of teeth and anvils are coated with extra-hard Tungsten carbide. When fed by conveyor, it does not require an attendant.

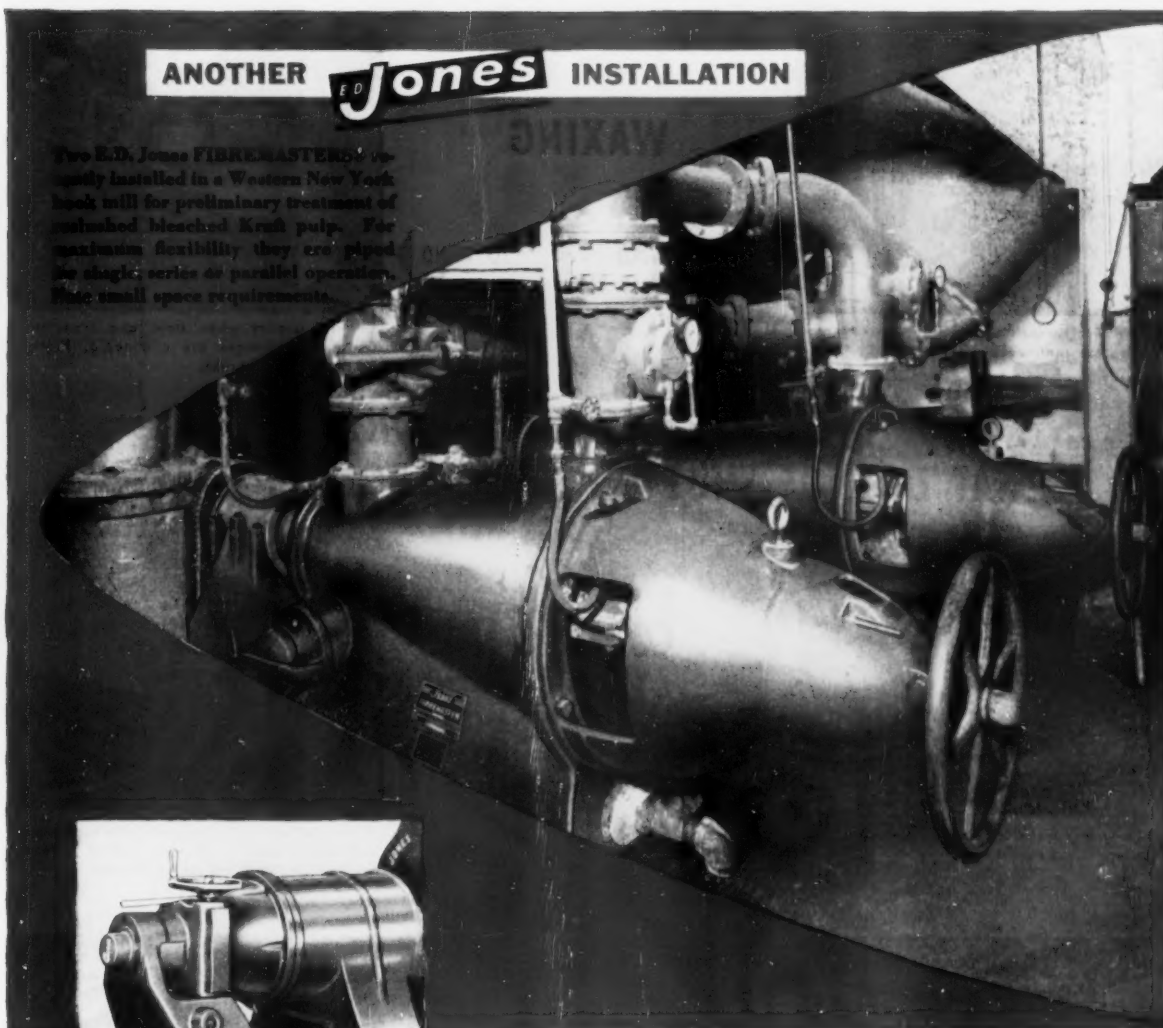
Mr. Montgomery is president and chief engineer of Jacksonville Blow Pipe Co., which he founded 28 years ago. He was born in Brunswick, Ga. Plans are under-way to expand the 25,000 sq. ft. plant, which has 45 employees. Mrs. Montgomery is secretary of the company. Robert P. Colyer, treasurer.

ANOTHER

E.D. Jones

INSTALLATION

Two E.D. Jones FIBREMASTER units installed in a Western New York book mill for preliminary treatment of unbleached bleached Kraft pulp. For maximum flexibility they are piped in either series or parallel operation. Note small space requirements.



Now available with ACCRU-SET®
— automatic plug adjustment

This latest triumph of Jones engineering provides completely automatic, completely reliable finger-tip control of plug adjustment for uniform, predetermined power throughout your stock run. Guarantees more uniform stock treatment, less operating horsepower, protection for plug and shell bars if power or stock flow fails.

Easily installed on any Jones Jordan, Fibre-master or Refiner. Write today for details.

MINIMUM Floor Space MAXIMUM Results

The simplified, rugged design of the FIBREMASTER requires relatively little floor space. Yet it has *twice* the capacity of the famous Jones High-Speed Refiner . . . and without sacrificing any of the features that have made the smaller machine so popular.

As a general utility unit on all stocks from news to rag, the Fibre-master combines flexibility, improved stock control, economy of power and low maintenance cost. Ask your Jones representative for details or write for Bulletin EDJ-1035.

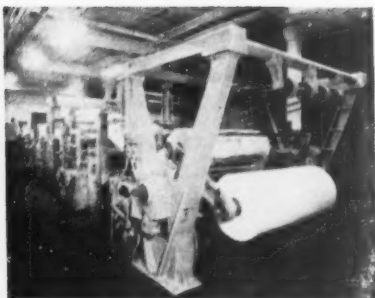
E.D. Jones

E. D. Jones & Sons Company
Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

September 1953

115



Kohler Reels—installed with Dilt's waxing machines for continuous waxing.

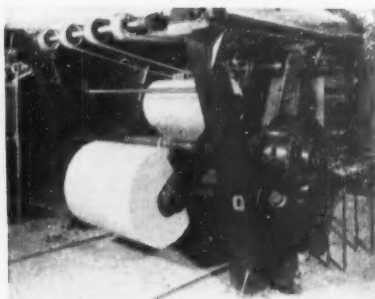
WAXING

◀ FROM UNWIND TO WIND ▶



Uniform quality when stops and starts between roll changes are eliminated. Higher production. Less broke.

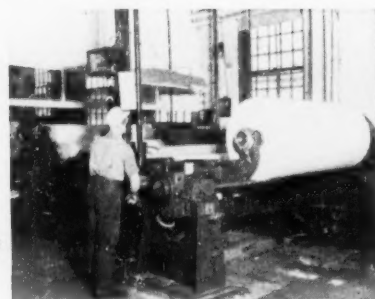
CONVERTING OPERATIONS THAT DO NOT SHUT DOWN FOR ROLL CHANGES



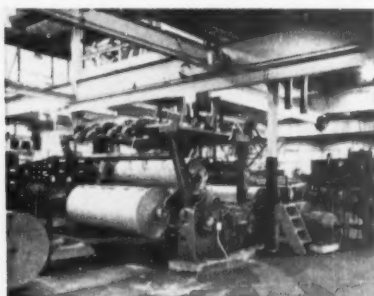
Clay Coater installation utilizing Kohler Reels for continuous operation.

COATING

◀ FROM UNWIND TO WIND ▶



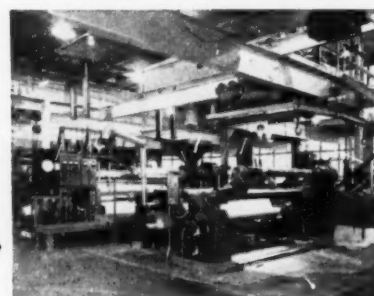
Eliminates losses in drying oven by continuous operation. Uniform tension control reduces web breaks and loss of production.



Polyethylene extrusion laminator using Kohler Reels to continuously produce polyethylene coated papers.

EXTRUDING

◀ FROM UNWIND TO WIND ▶



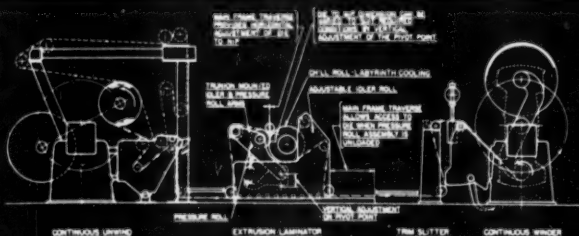
Clean up time, waste, and broke greatly reduced by continuous operation on polyethylene extruders. More machine production.

THE BLACK-CLAWSON CO. • DILT'S MACHINE WORKS DIV. • Fulton, N. Y.

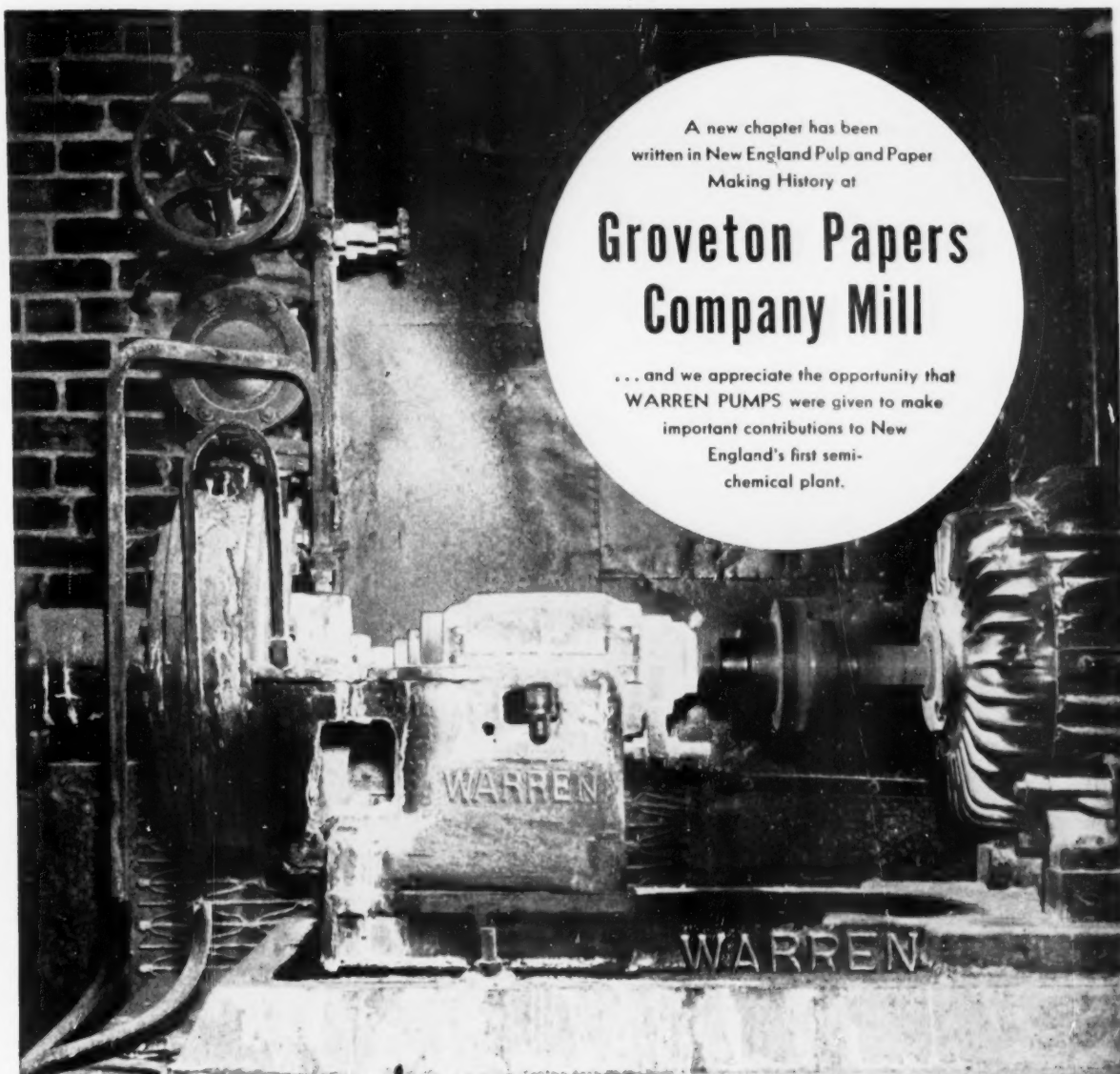
Dilt's



Embossers
Coaters
Laminators
Waxers
Unwinds
Winders



CONTINUOUS UNWINDS AND WINDS



A new chapter has been
written in New England Pulp and Paper
Making History at

Groveton Papers Company Mill

... and we appreciate the opportunity that
WARREN PUMPS were given to make
important contributions to New
England's first semi-
chemical plant.

One of four Warren Pumps at bottom of accumulator tank and absorption tower in new acid plant. This pump is pumping white liquor, one pump is used for circulating each of soda ash accumulators, and two pumps are for the absorption towers. (Groveton Papers Co., Groveton, N.H.)

21 WARREN PUMPS were involved in this project, including a variety of services and conditions, and our pump engineering experience previously acquired on this modern pulping process proved valuable.

New processes or old, there is no substitute for EXPERIENCE, and you can depend upon WARREN for that, and to develop ways and means of successfully solving the Paper Industry's pumping problems.

PP-28

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

September 1953

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Stebbins Celebrates 50th Corporate Anniversary

This month, The Stebbins Engineering and Manufacturing Co., Watertown, N.Y., celebrates its 50th corporate anniversary. Founded in 1884 by H. W. Stebbins, and incorporated in 1903, the company has specialized in design, installation, maintenance and repair of corrosion-resistant linings and process vessels.

The company serves all process industries, but has devoted its major effort to the pulp and paper industry. Beginning with the installation of ceramic linings in digesters and acid towers in the sulfite industry, Stebbins has developed and applied new lining materials and techniques to satisfy the changing cooking, bleaching and storage problems.

Today, Stebbins engineers utilize a wide range of materials, such as acid brick, tile and carbon brick, and membranes.

Adds to Container Plant

Addition of 50,000 sq. ft. of corrugated box manufacturing space will be effected by Krafco Container Corp., West Monroe, La., according to George W. Scrimshaw, board chairman, Dallas, Tex. The plant is adjacent to Brown Paper Mill Co.

Robert Engelhardt Joins Orr Felt

Morrison B. Orr, president of The Orr Felt & Blanket Co., announces addition of Robert Engelhardt, Jr., to the company's sales personnel. Mr. Engelhardt was with United Board & Carton Co.'s Urbana, O., board mill and later served in the U. S. Army. After being discharged, he attended Western Michigan College and recently has been a salesman for United Board & Carton in New York City. His late father, Robert Engelhardt, Sr., was well known as a board mill superintendent. Mr. Engelhardt will call on mills in Indiana, South Illinois, Missouri, Iowa, Kansas, Colorado and Oklahoma.

Mr. Orr also announces:

Dan Spencer is being brought into the home office, Piqua, O., as sales manager, but will continue to call on the mills in the Miami Valley of Ohio.

Robert MacFarlane, now serving mills in the Chicago area and southwest Michigan, will also call on mills in Ohio outside the Miami Valley, and in West Virginia, west Pennsylvania and west New York.

Man uses paper more than any other commodity except water. You are in an indispensable industry!

POSITIONS OPEN—MEN WANTED

We can place asst. mgr. dissolving pulp mill; asst. supt. corrugated board mill; cylinder, four-drummer and Yankee mach. foreman; roofing felt mill foreman; chemists and chem. engineers for mills, also for demonstrating and selling; maint. supt.; mechanical and plant engineers; instrument engineer; master mechanics, designers and draftsmen; super-calender foreman; time study men; machine tenders and backtenders. If you are available for employment, send for our application blank.

WE WELCOME YOUR INQUIRIES

CHARLES P. RAYMOND SERVICE, INC.

294 Washington St.

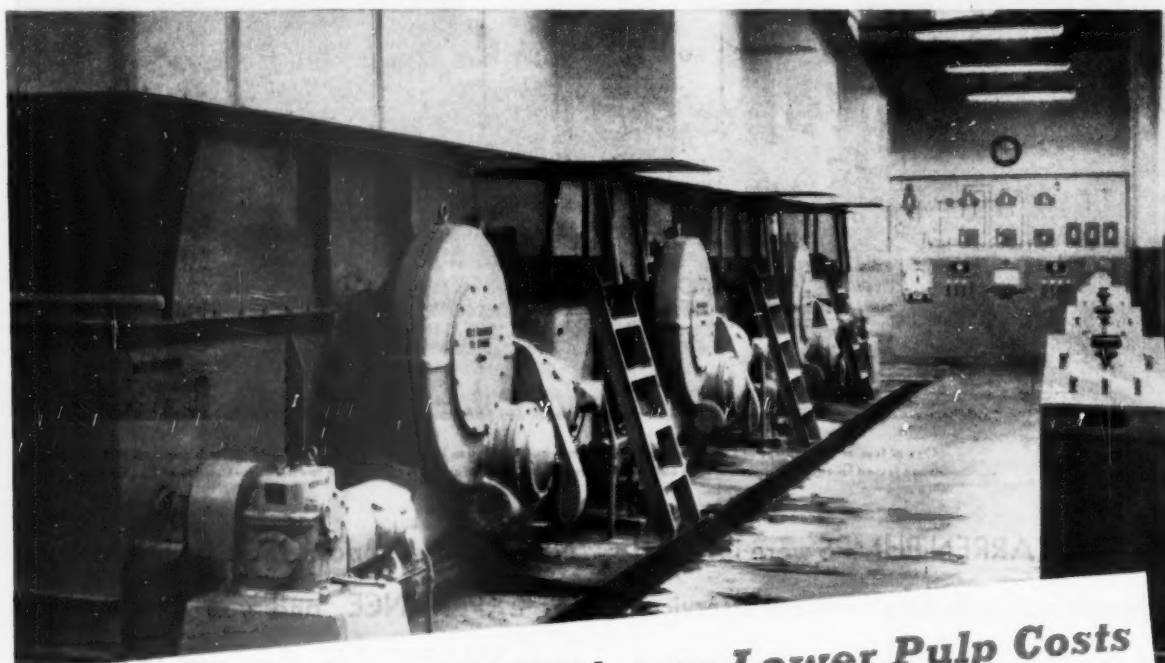
Boston 8, Mass.

Phone: Liberty 2-6547

CYLINDER MACHINE MILL in Middle West interested in making close connection or working arrangement with converter who uses at present, or could use, cylinder machine products. Reply Box 156, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

Celli-Flynn Moves

Celli-Flynn, architects and engineers, who did architectural work on some buildings of the new St. Regis plant and properties at Jacksonville, Fla., has moved to new offices at 335 Shaw Ave., McKeesport, Pa.



Clean Pulp + Low Dilution = Lower Pulp Costs

Multi-stage counter-current operation of Swenson Pulp Washers provides thorough washing with minimum dilution. Evaporation rates are reduced . . . lower salt cake makeup results. High-consistency discharge and closed-system operation reduces mill effluent losses. Swenson Engineering will solve your problems by meeting specific needs with specific designs. Write for information!

SWENSON EVAPORATOR COMPANY
15632 Lathrop Ave., Harvey, Illinois

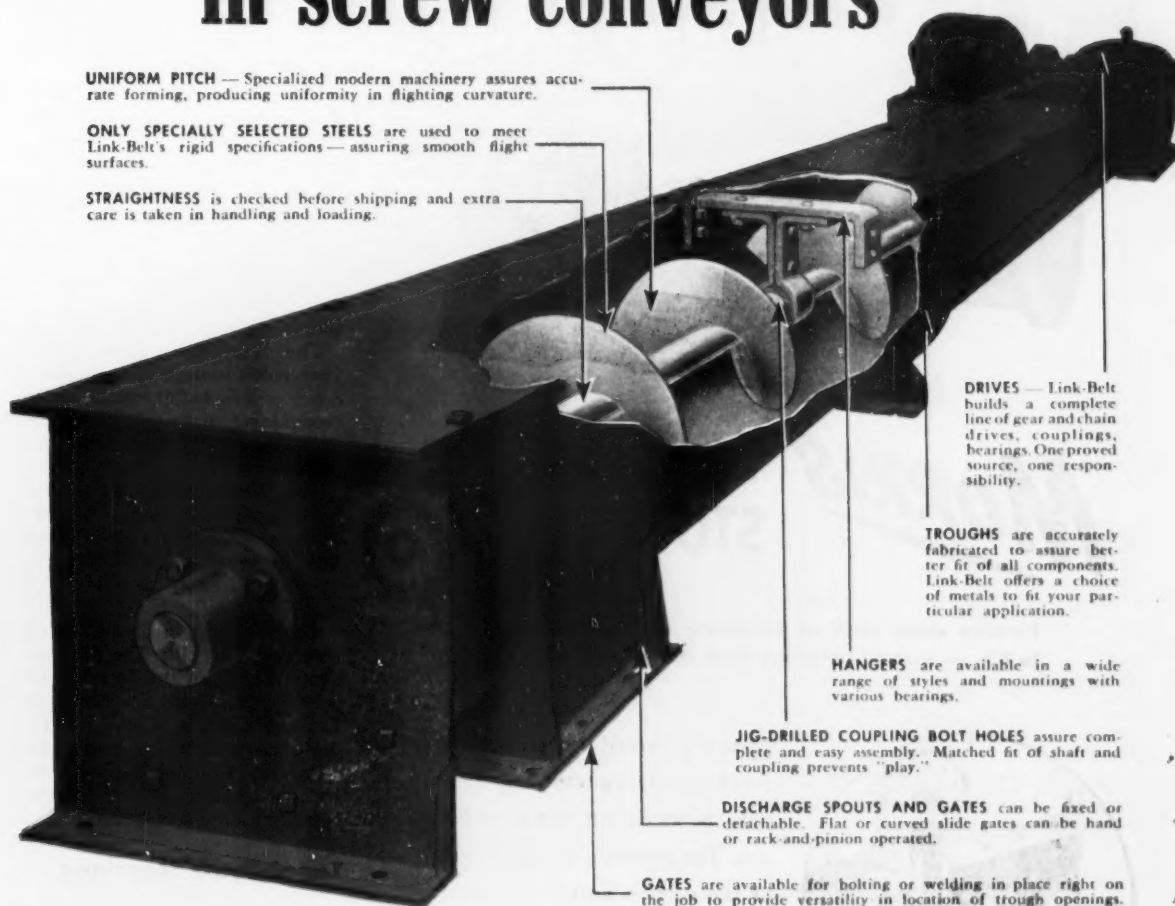
SWENSON

Proved Engineering for the Process Industries
SINCE 1889

Pulp Washers • Evaporators •
Filters • Digester Blow Condensers
• Turpentine Condensers

Division of
WHITING
Corporation

There are important differences in screw conveyors



UNIFORM PITCH — Specialized modern machinery assures accurate forming, producing uniformity in flighting curvature.

ONLY SPECIALLY SELECTED STEELS are used to meet Link-Belt's rigid specifications — assuring smooth flight surfaces.

STRAIGHTNESS is checked before shipping and extra care is taken in handling and loading.

DRIVES — Link-Belt builds a complete line of gear and chain drives, couplings, bearings. One proved source, one responsibility.

TROUGHS are accurately fabricated to assure better fit of all components. Link-Belt offers a choice of metals to fit your particular application.

HANGERS are available in a wide range of styles and mountings with various bearings.

JIG-DRILLED COUPLING BOLT HOLES assure complete and easy assembly. Matched fit of shaft and coupling prevents "play."

DISCHARGE SPOUTS AND GATES can be fixed or detachable. Flat or curved slide gates can be hand or rack-and-pinion operated.

GATES are available for bolting or welding in place right on the job to provide versatility in location of trough openings.

LINK-BELT gives you sound engineering plus accuracy of manufacture for top performance

WHEN you buy a Link-Belt Screw Conveyor, you can be sure of efficient operation plus long-life, low-maintenance service. Link-Belt builds all types and sizes of components—you get the screw conveyor that's *right* for your job . . . with all components *completely integrated*. What's more, long-lasting efficiency is assured, thanks to Link-Belt's unequalled accuracy of manufacture. Let your nearby Link-Belt sales representative or distributor point out the many important differences in screw conveyors. And be sure he gives you a copy of new Book 2289.

Get this complete screw conveyor book—92 pages of pre-engineered selection and application data. Ask for Book 2289.



LINK-BELT

SCREW CONVEYORS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Scarborough, Toronto and Elmira, Ont. (Canada); Springs (South Africa); Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

September 1953

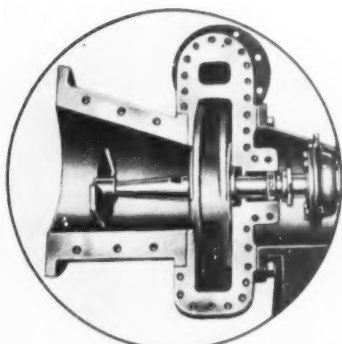
119

**No Pulsation; No Dehydration
of High Consistency Stock**



MORRIS Type ST-P STOCK PUMP

Handles clean stock of extremely high consistency — up to 8% — without pulsating flow, dehydration or clogging.



View showing suction booster and impeller

Morris' patented suction booster mechanically agitates and propels the stock into the impeller eye. The eccentric configuration of the suction nozzle combined with the axial flow action of the suction booster prevents extraction of water and clogging of suction pipe with dehydrated fibre.

Another point. The resultant constant feed assures flow throughout the system, free from pulsations. Steady action helps keep down shaft deflection — holds packing wear to a minimum.

Write for Bulletin 176, giving sizes, capacities and engineering data.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS Centrifugal Pumps

FOREST CROPS AS BANK COLLATERAL

Senate Bill No. 2069 (by Sen. Cordon-R, Ore.) is the culmination of many months of activity by the forest credits committee of Western Forestry and Conservation Association, supported by Washington and Oregon Bankers Associations, according to Stuart Moir, forest counsel for the association.

The United States National Bank of Portland, Ore., Clyde S. Martin, forester for Weyerhaeuser Timber Co.; David T. Mason, consulting forester of Portland, E. T. F. Wohlenberg, vice president of Masonite Corp., Ukiah, Calif., and Mr. Moir favor the bill to correct a grave inequality in banking laws which recognized forest products such as lumber, pulp and paper, as collateral for bank loans, but failed to accept the trees themselves.

The Western Forestry Conference last year voted to urge the comptroller of currency and financial institutions to consider recognizing managed forest tracts as acceptable collateral for loan purposes by national banks.

Mr. Wohlenberg said: "After all, the forest crop isn't any different from any other crop except that it takes a longer time to grow it. It isn't likely that timber values will drop very much during the next 50 years."

The Association of State Foresters has endorsed the bill. The Cordon Bill also has approval of the Interior Department, Comptroller of the Currency, the Federal Reserve Governors, and the Federal Deposit Insurance Corp. The measure would authorize national banks to make loans secured by first liens on forests "properly managed in all respects."

Tappi Coast Meetings

Pacific Coast Tappi's 1953-54 schedule: Sept. 23-24—Seminar, U. of Wash., Seattle.

Sept. 25—Engineering conference, Tacoma, Wash.

Sept. 28-29—Seminar, Portland, Ore.

Nov. 3—Wood Products meeting, Longview, Wash.

Jan. 19—General mill problems, Everett, Wash.

Mar. 19—Shibley award contest, West Linn, Ore.

Southeast Meetings

Southeastern section of Tappi announces these meetings:

Sept. 25—Frederica Yacht Club, Brunswick, Ga.

Dec. 4—Fort Sumter Hotel, Charleston, S. C.

Jan. 22, 1954—Hotel Dempsey, Macon, Ga.

March 19—Geo. Washington Hotel, Jacksonville, Fla.

May 14—Hotel DeSoto, Savannah.

Another Oklahoma Mill

Certain-Teed Products Corp. of Ardmore, Pa., is building a 50-ton felt mill nearby its one-year-old paperboard mill at Pryor, Okla. It is designed by Walter G. Will, Certain-Teed chief engineer.

Results are spectacular with

Bauer CENTRI•CLEANERS

Everyone who sees examples of the work done by Centri•Cleaners is astonished at the results. The examples are sheets made from the stock which goes into the Centri•Cleaners, sheets made from the accepted stock, and sheets made from the final rejects. Some photographic reproductions are shown below, but they are not as sensational as the sheets themselves.

Our representatives have assortments of sheets from a number of kinds of stock processed with the No. 600 and No. 622 Centri•Cleaners. If you wish to see the examples, let us know and our representative in your area will show them to you on his next call.

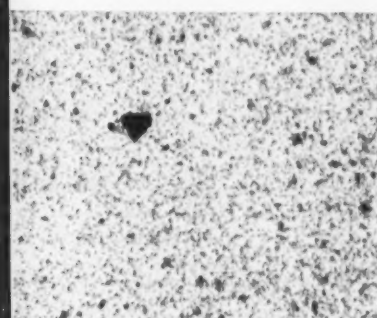
In the meantime, we suggest that you ask for our Bulletin No. P-4 which explains the construction and operation of Centri•Cleaners.



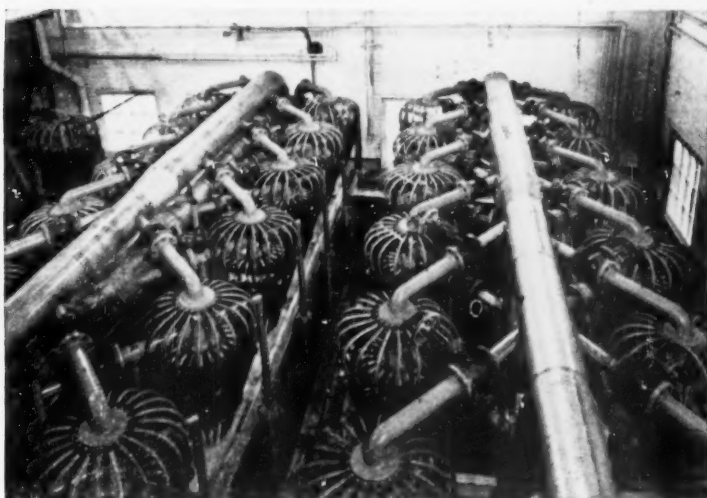
Sheet made from sulphite screen rejects. This is what went through the Centri•Cleaners.



Sheet made of accepted stock from the primary group of Centri•Cleaners.



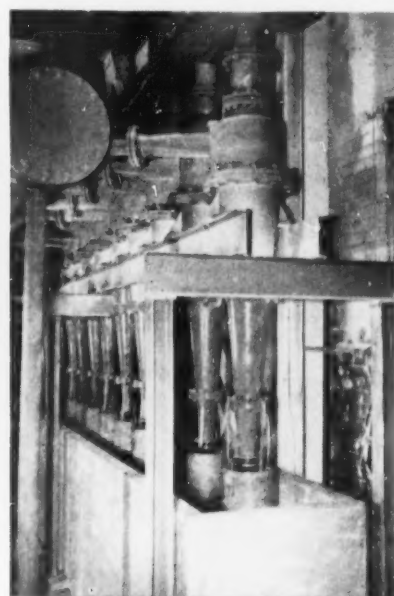
Sheet made of Centri•Cleaner final rejects. This sheet consists of sand, bark, shives, and other refuse.



Overhead view of No. 600-3" Centri•Cleaners manifolded into inlet and outlet headers. These Centri•Cleaners are cleaning unbleached sulphite pulp.

Our representative will be glad to show you actual examples of work done by Centri•Cleaners.

Ask for Bulletin No. P-4



Installation of ten primary and one secondary No. 622-12"x4" Centri•Cleaner ahead of a paper machine. Each group is manifolded into inlet and outlet headers.

THE BAUER BROS. CO. • 1706 Sheridan Ave. • Springfield, Ohio

September 1953

121



**"Our Camachine 14
handles 70 tons of
asbestos paper a day**

**—keeping well ahead of the
paper machine output"**

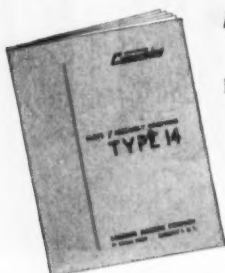
says R. D. DEININGER, plant manager

Sall Mountain Company, Hamilton, Ohio

"Our paper machine department faced a twofold problem . . . increased production and more exacting roll specifications. With equipment then operating, rejects through slipped or spliced rolls were alarming and maintenance was excessive.

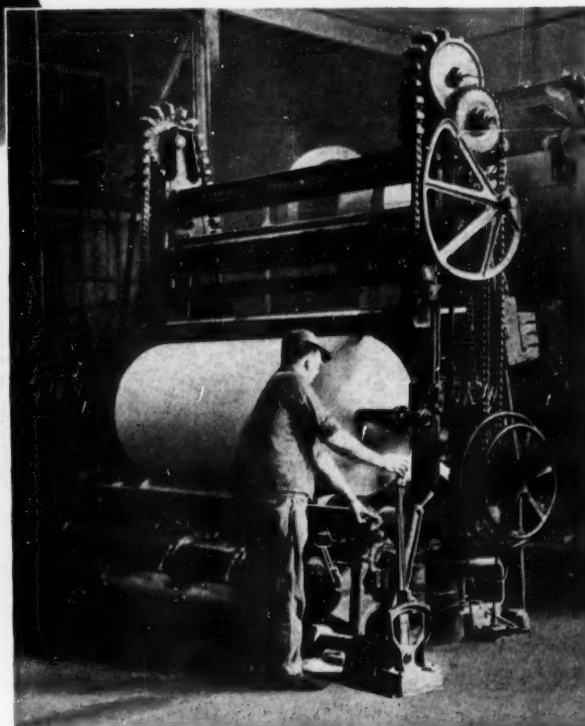
"Cameron engineers provided a Type 14 equipped with shear-cut slitters to wind our 'Sal-Mo' asbestos paper (in a caliper range of .012 to .125) in rolls of varying width and diameter.

"Our Camachine 14 readily filled the bill and 'Sal-Mo' customers continued to receive the quality goods made popular by this famous name in the asbestos industry."



**MEN AT WORK —
to cut your costs!**

For example, Camachine engineers have recently completed new parts catalogs covering most mill-type models. These carefully illustrated books provide fast, easy, accurate reference to any part of the machine. Write for information.



Camachine Type 14 in action at Sall Mountain Company's Hamilton plant

CAMERON MACHINE COMPANY • 61 Poplar Street • Brooklyn 1, N. Y.

Don't wind up with less than a *Camachine*® •

• AA-578

representative: pacific coast supply company • public service building, portland 4, ore. • 260 california st., san francisco 19, cal.

45

Installations

PROVE INDUSTRY CONFIDENCE



These 10 x 11 x 175 rotary lime sludge kilns are building profits at the Macon Kraft Co., Macon, Georgia.

EVER SINCE LIME SLUDGE RECOVERY became an important profit factor in the sulphate paper industry, the Allis-Chalmers kiln has been the choice of American and Canadian pulp mills. This industry-wide preference for the Allis-Chalmers lime sludge kiln is the result of the many engineering and construction features that provide the continuous, long-term, low-cost performance essential to profitable operation.

With the Allis-Chalmers kiln, fuel savings of as much as 30% and a 10% capacity increase are made possible by the Allis-Chalmers patented heat recuperating system . . . a chain-hanger-spiral arrangement in the feed end of the kiln. This system effectively extracts heat from gases . . . gives low exhaust temperatures . . . increases heat transfer surface . . . cuts dust loss.

Other preference-establishing features of the A-C kiln include a carefully calculated diameter-length ratio which minimizes costly "ringing"; the improved 20 degree involute spur gear which distributes driving force equally; true circle shell construction insuring a better refractory lining fit and longer refractory life; floating type riding rings for adequate support and proper weight distribution.

Get all the facts. Write for Bulletin 07R7010, Allis-Chalmers, Milwaukee 1, Wisconsin.

A-4007

Texrope, Hi-Density and Streambarker are Allis-Chalmers trademarks.

OTHER A-C PAPER MAKING EQUIPMENT



Motors



Streambarker



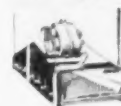
Texrope V-Belt Drives



Centrifugal Pumps



Hi-Density Feeder



Vibrating Screens

ALLIS-CHALMERS



HAM FELTZ says:

"Don't burn out the bearings of that old machine"

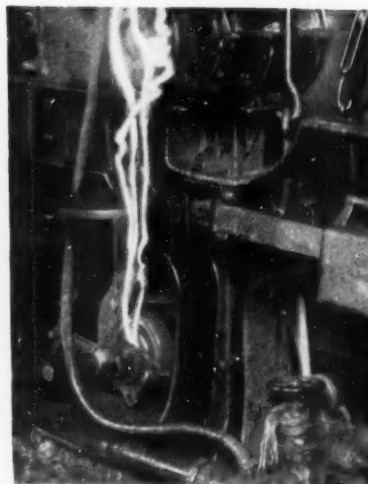
Many board machines now in operation in U.S.A. are very old. They were designed to run slow. Hamilton Felts are designed to run at speeds that may burn out the bearings of slow-speed machines.

When you increase the speed of your machine, remember that the bottom felt must both transmit the power to operate the wet end cylinders and to deliver your sheet to the dryer rolls as fast as the slitters and winders can take it.

For 94 consecutive years the superintendents of board mills have learned by experience that no felts do their work better, faster or at lower cost than Hamilton Felts.

MIAMI WOOLEN MILLS

Established 1853



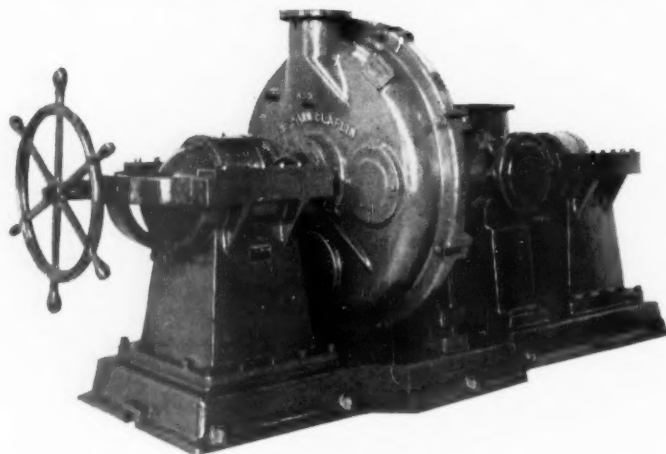
Hamilton Felts

SHULER & BENNINGHOFFEN, HAMILTON, OHIO

HERMANN *Improved* CLAFLIN

"Continuous Beater & Refiner"

"Continuous"
Beating-Refining
Kraft Pulp for
Multiwall Bag,
Gumming & Kraft
Specialties.
Waxing Tissues
Glassine & Grease-
Proof Grades
Facial Tissue
Rag-Cotton Liners
Deinked Stock
Filler Stock
Liner Stock
"Cycling"

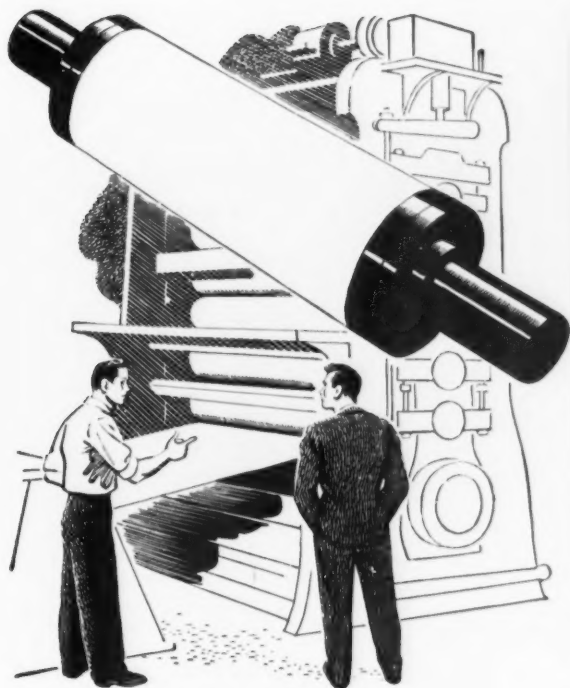


"Hot Brown Stock"
Blow Tank to
CLAFLIN direct
to the Washers
"Asplund Fibre"
.009 Corrugating
"Chemipulper"
"Defibrator Stock"
Roofing Felt
"Neutral Sulphite"
.009 Corrugating
"Knotter-Screen
Rejects"
Straw-Bagasse

Four Size Units Including No. 0 For Laboratory-Test Purposes.

NOW AVAILABLE: NEW NO. 3 HEAVY DUTY UNIT WITH TANGENT HEAD-VOLUTE INLET.
FOR DEFIBERING HOT BROWN STOCK. REQUIRES LESS THAN 1-H.P. PER TON.

THE HERMANN MFG. CO. LANCASTER, OHIO



Better Service— Less Servicing

Longer life in every Butterworth Calender Roll . . . fewer delays for turning down or refilling . . . smoother uniform finishes! These add up to better quality at lower cost in leading mills everywhere.

If down-time is boosting your maintenance, and competition boasts a better finish, make this simple test. Install one Butterworth Calender Roll. Check its service life and performance against every other roll in your stack. Then standardize on long-life Butterworth Rolls to speed production, slash maintenance costs.

Pre-tested for hardness, smoothness and density, Butterworth Calender Rolls are made to your specifications. Furnished new or refilled for every calendaring need — coated, super, glassine or embossing. Let us quote on your requirements.

For full information, write or call H. W. Butterworth & Sons Company, Bethayres, Pennsylvania — 187 Westminster Street, Providence, R. I. : 1211 Johnston Building, Charlotte, N. C.

Butterworth

CALENDER ROLLS

September 1953

Ask us! FOR DETAILS ON THIS NEW MURCO EQUIPMENT!

MURCO-MOSINEE
Automatic
DIGESTER
STOCK
SAMPLER

Obtain a sample of pulp from various levels in your digester . . . know when and where shives and poorly cooked pulp are being made . . . timer is set so

that any number of pulp samples can be taken automatically during the blowing of a digester, either a large or small pulp sample. No extra piping needed from the digester . . . simply attach this stock sampler to your usual common blow pipe as illustrated here. When ready to blow close the main switch that in turn sets the timer in motion. Stock sample can be automatically washed and cooled for laboratory analysis.

MURCO "V" TYPE SPOUT for pulpwood chippers



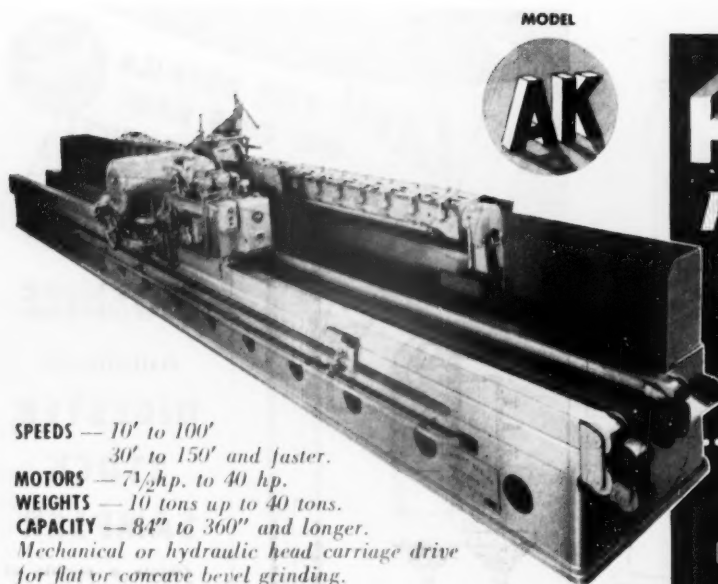
No matter what your chipper may be there is a MURCO "V" Type Spout to fit it. It holds the wood firmly, reduces sawdust, improves chip quality, and chip uniformity. There is no spout plugging . . . no lost time and hazards due to log jams in the spout. Every design of fabricated steel makes for efficient performance and maximum service.

OTHER MURCO EQUIPMENT

- Plate-Shell Type Barking Drum
- Crusher
- Type Spout For Pulpwood Double Deck Chip Screen
- Level Vibrating Table
- Stainless Steel Flat Screen
- Chipper
- Gate Valves
- Collard Windershafts
- Rechipper
- Multiple Knife Discs
- Pulpwood Slasher
- Hydraulic Roll Lowering Table
- Stainless Steel Pipes and Fittings
- Multiple Knife Wood
- Quick Opening Gate

Write for complete details, or ask our West Coast representative, Dan E. Charles Agency, 1331 Third Avenue, Seattle, Washington for more information.

D.J. MURRAY MANUFACTURING CO.
MANUFACTURERS SINCE 1883
WAUSAU WISCONSIN



SPEEDS — 10' to 100'
30' to 150' and faster.
MOTORS — 7½ hp. to 40 hp.
WEIGHTS — 10 tons up to 40 tons.
CAPACITY — 84" to 360" and longer.
Mechanical or hydraulic head carriage drive
for flat or concave bevel grinding.

Other Models: **GK** — medium heavy duty — capacity 32" to 134"
DN — normal production — capacity 32" to 108"

HANCHETT MANUFACTURING COMPANY



World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery

MAIN OFFICE — Big Rapids, Michigan

WEST COAST — Portland, Oregon

HANCHETT

knife grinders

for the
**PULP AND PAPER
INDUSTRIES**

**FOR GRINDING — HOG — BARKER
PAPER TRIMMER AND DOCTOR BLADES**

**MAMMOTH CONSTRUCTION
FOR ACCURACY — FINEST FINISHES
PLUS HIGH PRODUCTION**

MAGNUS

for
**High Sustained Yield
of
CLEANER PULP**



MAGNUS METAL CORPORATION

Fitchburg, Massachusetts
Subsidiary of National Lead Company

Metalworkers for the Paper Trade

**SCREEN PLATES: BRONZE, CHROME
NICKEL-STEEL, AND INCONEL**

**VALVES: GATE, SWING CHECK,
BLOW, GLOBE, ANGLE AND "Y"**

THIN-SHEET SCREEN PLATES



Magnus screen plates, made of chrome-nickel-steel or inconel, have a high-strength, thin sheet design that's specially engineered for maximum flow. About 40,000 of these plates are now in service, with performance records that prove these three important advantages:

1. Increased Capacity

The thin sheet eliminates relief milling, and with recommended arrangement, substantially increases capacity per plate.

2. Longer Life

Slots remain sharp, side walls highly polished for the life of the plate. There's greatly improved corrosion resistance, too.

3. High, Sustained Yield

Thin-sheet screen plates assure consistent, uniform quantities of cleaner pulp. This means improved production at reduced operating costs.

Complete information is yours on request. Or if you like, we'll gladly have an engineer call.



CUTTING COST ALL ALONG THE LINE

Valve replacement... repair... and shutdowns for maintenance are costly in both time and lost production. Eliminate this expensive waste by installing Fabri-Valves. These valves are designed to handle heavy paper and pulp solutions with only minimum maintenance. Fabri-Valves are made of stainless steel, monel or any combination alloy plate and fabricated to your specific needs. Fabri-Valves are complete weldments of rolled plate, eliminating porous areas, giving complete internal and external protection wherever required.

Fabri-Valve's more economical construction saves on original price... installation and shipping cost. Sizes 2" to 24" Fabri-Valves carried in stock... custom made orders filled in 30 days. Contact your nearest dealer for details on how Fabri-Valves will cut your production cost.



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FELKER BROS..... Marshfield, Wis.
NORTHWEST COPPER WORKS, Inc..... Portland, Ore.
THOS. W. MacKAY & SON, Ltd..... Vancouver, B.C.
CHANDLER BOYD CO..... Pittsburgh 19, Penn.

September 1953



It may be that you have use for a superior reducing or bleaching agent, antichlor, PH control or neutralizer. Our technical staff is ready to help you to produce greater efficiency and increased profits through the use of Tennessee's highest quality Sulphur Dioxide in your research, processing or production problems.

Let us send you descriptive material on Tennessee's highest quality Sulphur Dioxide (SO₂) today.

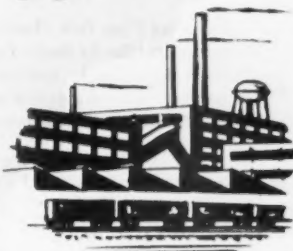
PULP USES

Sulphur Dioxide is used in treating paper pulp to prevent color reversion. The use of Sulphur Dioxide makes certain undesirable materials easier to wash out of the pulp.

Sulphur Dioxide replaces or supplements burner gas (the Sulphur Dioxide obtained by burning elemental Sulphur), resulting in increased efficiency.

CONTAINERS

- Cylinders
- Ton Drums
- Tank Trucks
- Tank Cars



For detailed information,
phone, wire or write—



TENNESSEE CORPORATION

617-29 Grant Building, Atlanta, Georgia

PULPWOOD PILES

"Melt Like Snow"

WHEN
OWEN GRAPPLES
"Go to Work"



New records in pulpwood handling are being established as booms swing and the improved Owen Grapples come up with a full grab at every cast.

For an impressive pictorial story with the pertinent facts you will want to know, write for the Pulpwood Grapple Catalog.

THE OWEN BUCKET CO.

6066 BREAKWATER AVE. • CLEVELAND, OHIO

BRANCHES: NEW YORK • PHILADELPHIA • CHICAGO • BERKELEY, CALIF.



The Marvelous
Montgomery

BLO-HOG

(The only all-purpose
hog in the world)

**Eats Up
Everything!**

...including Pine, Oak, Gum, Hickory, Elm, Wet Veneer, Round-up and Sandy Bark. Conveyor-fed — no attendant required. Positively protected from major damage by tramp steel. All connections locked — nothing to shake loose. Maintenance costs unbelievably low.

"... Dear Mr. Montgomery: It is an unbelievable machine and it is still hard to believe that it is actually handling the enormous volume of scrap we are feeding into it. We operate the hog without an attendant—which means a considerable saving.—J. B. Black, Plant Superintendent, Ocala Manufacturing, Ice and Packing Co., Ocala, Fla."

C. I. T. Terms Available



Write for bulletin and details

JACKSONVILLE BLOW PIPE CO.

P. O. Box 3687, Jacksonville, Florida

General Manager

A General Manager is required for the Tasman Pulp and Paper Company Limited of Auckland, New Zealand. The Company which is one of the largest in New Zealand, has a nominal capital of £6,000,000, some of which has been subscribed by the New Zealand Government. Contracts have been let for the erection of the plant and for the purchase of the major items of equipment. The pulp, paper and sawmills, which will have a capacity of 75,000 tons of newsprint and 72,000,000 bd. ft. of timber annually and 150 tons of kraft pulp daily, will be situated alongside the township of Kawerau in the Bay of Plenty, North Island, twenty miles from the town of Whakatane and within fifty miles of Rotorua and Tauranga. The company requires a man of the highest calibre with a proven record in the management of a large scale commercial enterprise, with the ability to lead and conduct the affairs of the Company on the highest level. Previous experience in the pulp and paper industry is desirable, but not essential. A substantial salary will be paid; duties will commence in New Zealand within twelve months; housing available, and first-class fares to the successful applicant and his family will be paid. Applications will be treated in the strictest confidence and should be made in duplicate to the Chairman of Directors, Tasman Pulp and Paper Company Limited, Private Bag, Auckland, New Zealand, and should be accompanied by copies of recent testimonials and a photograph.

*a town
to
yourself*

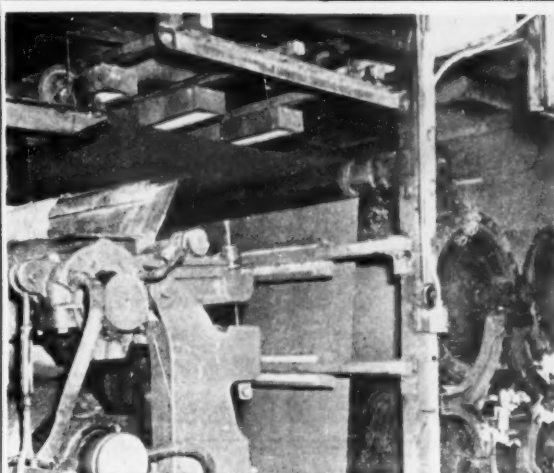
In the six
Southeastern states of
Virginia, North Carolina, South
Carolina, Georgia, Alabama and
Florida, there are many small
towns and rural communities "ripe"
for industrial development.

You can take your pick of one of
these locations where labor is
plentiful and eager to work, and
where other factors are highly
favorable to industry.

Here is a situation from
which you can profit.

Let us particularize . . .
in strict confidence,
of course.

Warren T. White, Assistant Vice President,
Seaboard Air Line Railroad Company,
Norfolk 10, Virginia



RED RAY BURNERS

Installed between Press and 1st Dryer
Heat applied to both sides of the web.

Simple, economical means of increasing drying capacity. Installations include automatic controls and safeguards.

Write for bulletins.

Red Ray Manufacturing Co., Inc.
455 W. 45th St., New York, N. Y.

Tel: Plaza 7-5174

BOARD MILL SCREENS

The design of Fitchburg NEW TYPE-DUPLEX SLOT Screen Plates is perfect for Board Mill Screens.

Easy screening, "open" slots, highest capacity and almost complete absence of damage, due to rigidity of our "DUPLEX SLOTS."

Plates stay cleaner — Less "strings" and slime — Less wash-ups.

FITCHBURG
Screen Plate Co., Inc.

301 South St., Fitchburg, Mass.



**Stop digging out filter beds —
soak them clean in half an hour**

NO MORE SHOVELING—now you can clean your filter beds in a jiffy, with almost no effort.

Just sprinkle a little Oakite Composition No. 30 over top of bed. Run water to dissolve the material. Let soak for about half an hour. Back wash filter from bottom up, overflowing until water runs clean.

That's all. Filter comes *clean*. No excessive foaming, no caustic dust, no odors. Makes periodic cleaning easy.

Try it yourself. Ask your Oakite representative, or write Oakite Products, Inc., 68 Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
TRADE MARK REG. U. S. PAT. OFF.
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

dependable

FRONTIER

caustic soda

(FLAKE, SOLID AND LIQUID)

muratic acid

chlorine



PROMPT DELIVERIES THROUGHOUT THE MIDDLE WEST

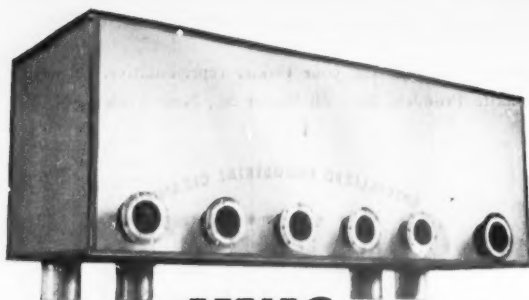


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WICHITA, KANSAS
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The DRAPER Felt

DRAPER BROTHERS COMPANY
CANTON, MASS.



Another **NWC** Installation



We also carry in stock a complete line of schedules 5 and 10 pipe, elbows, tees and stub ends in 18-8 and 18-8 Mo. Stainless Steel. These fittings are die formed from sheet. Odd or large sizes can usually be furnished in a week. Samples furnished upon request.

PHONE
MURdock 2191

This Stainless Steel Stuffing Box was recently manufactured in our shops for one of the larger paper mills. We specialize in these fabrications and our wide experience in supplying custom-built equipment is available upon request. Write, Wire or Phone for prompt personal service.

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COPPER WORKS, INC.**
1303 No. River Street,
Portland 12, Oregon

Serving JAPAN C.T. TAKAHASHI & CO.

IMPORTERS and EXPORTERS

216-218 Third Avenue South, Seattle 4, Wash.

Established 1898

Exporting:

All Grades of Pulp

Pulp and Paper Mill Machinery and Supplies

Preliminary Reports, Layouts, Estimates and Designs for Kraft, Sulfite, Dissolving and Semi-Chemical Pulp Mills, Paper and Board Mills.

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C. T. TAKAHASHI & CO., TOKYO

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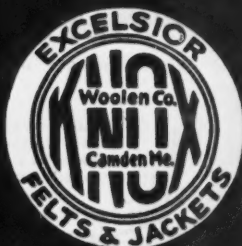
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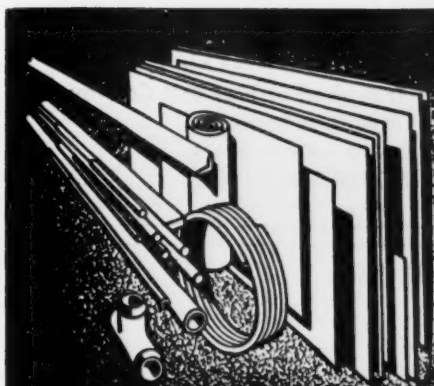
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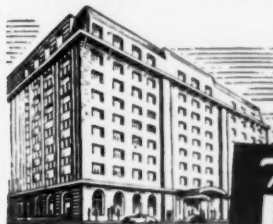
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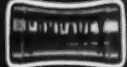


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